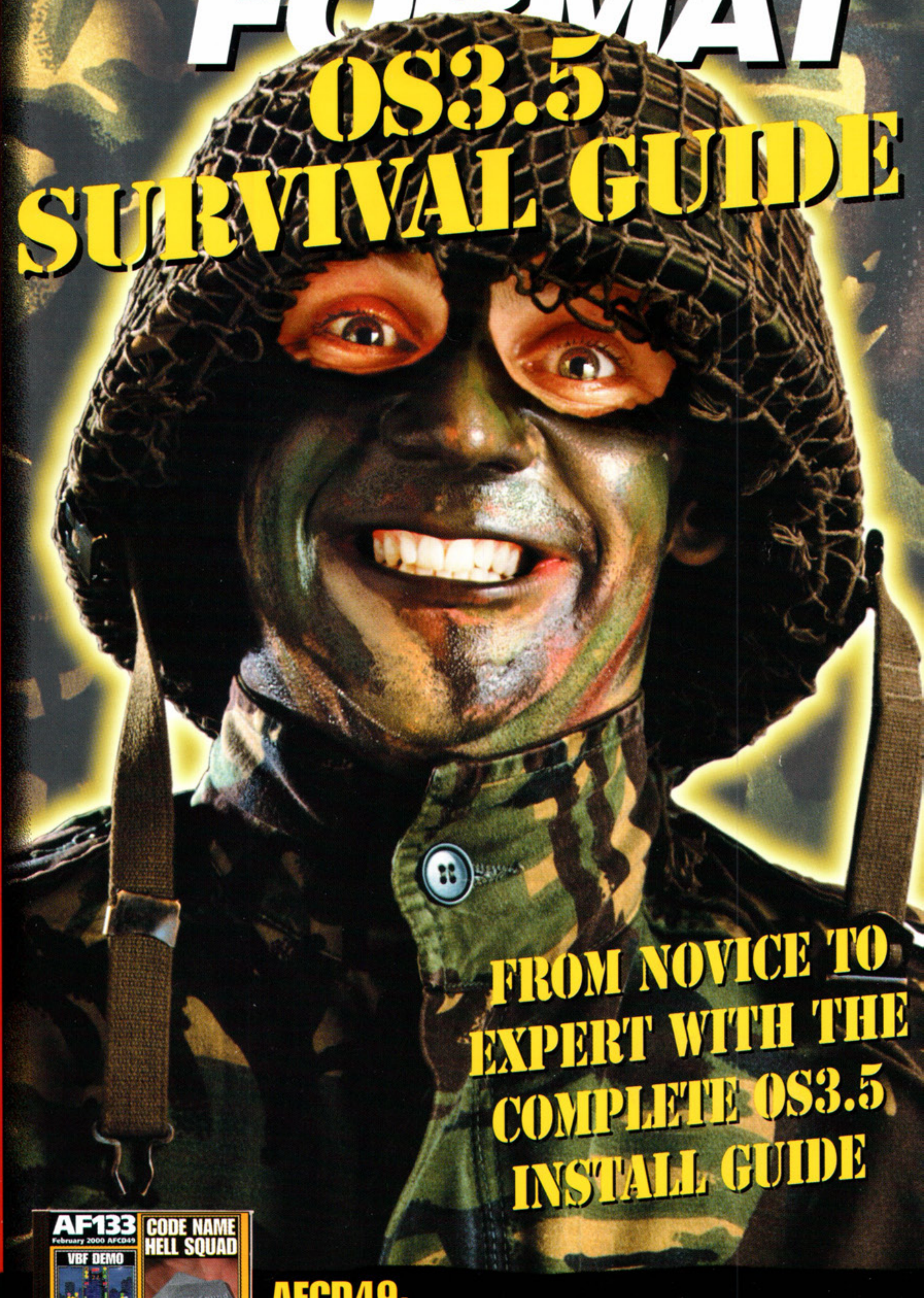
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- Full in-game Commentary & Speech.
- Very detailed car specs...
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- Support for mouse, digital and analogue; simplified car control method using digital.
- Instant Replay, to see your favourite car passing, crash, tail-head, etc.
- 6 different camera views, featuring the VirtualCockpit system: inside car, just-behind, far-behind, 360 degrees, track camera. Possibility to see every different car with every camera view.
- Full multitasking.





Amiga with CD Minimum: 8mb, 030 + HD

*Order: CD626D £20.00*



### ANIMAL KINGDOM

**Bertie's Animal Kingdom** is an Animal recognition game designed for **nursery,** and **pre-school children.**

In the game the child is helped along by a cartoon character called "Bertie" He gives them a task to perform, tells them what to do, and when the task is complete he tells them how well they did. Each question answered correctly will award them 1-3 gold stars which are shown at all times in the top left of the screen. This is to encourage them to beat this score with each new attempt.



Amiga with CD-ROM Minimum: 2mb + HD

*Order: CD905B £10.00*



### FOUNDATION DC

'Foundation DC' is a real-time strategy war game which incorporates familiar strategy elements with interesting new concepts.

- Full CyberGraphX, P96 & AHI.
- AGA Supported with fast new c2p, so AGA looks identical to RTG.
- New Rendering System.
- Faster Gameplay.
- Support for custom speech.
- Improved AI system.



AGA Amiga with CD-ROM Minimum: 8mb + HD, 030 rec.

*Order: CD901C £15.00*



### SIM LIFE

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More than a game.
It's evolutionary
*Optimized for more ram and better processors.*



AGA Amiga (Supplied on Disk) Minimum: 4mb, HD

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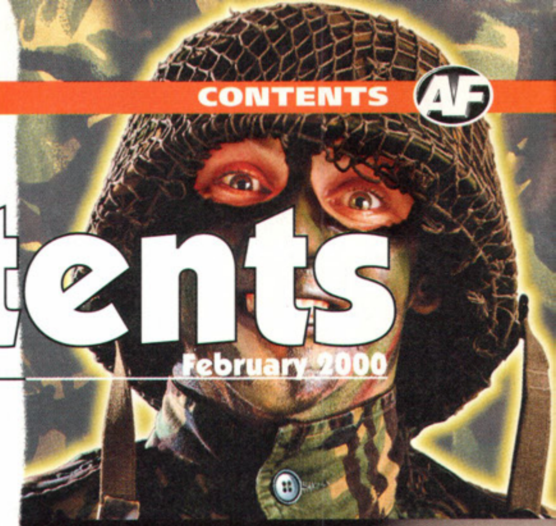
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*Shape of covershots: ■ = Supplied on CD ■ = Supplied on DISK, unless stated differently.*



# AMIGA FORMAT Contents

Issue 133 February 2000









KEY: Regulars Games Serious Creative Readers' Stuff







## REGULARS



## SCREEN PLAY



## SERIOUS



## CREATIVE






## AF'S REVIEW POLICY

...is very simple. ***Amiga Format*** is written by the most experienced Amiga users in the world and what we say goes. OK?

### WHAT OUR REVIEW SCORES MEAN

| | |
|---|---|
| 90+% | These products are absolutely top notch. They are hard to find any fault with and that's the reason they get an ***AF Gold*** award. |
| 80-89% | These are excellent products that could be improved ever so slightly. They are well worth your cash. |
| 70-79% | A very good product with a few flaws. Items that get a score in this range are still good, but need work. |
| 60-69% | Above average products which need improvement to get a better score. |
| 50-59% | Average products get average scores. |
| 40-49% | Below average and needs a fair bit of work to make it worthwhile. |
| 30-39% | Needs a lot of work for a good score. |
| 20-29% | Something fatally wrong. |
| Under 20% | The absolute pits. |




# WORLD NEWS

■ Java for free ■ Fast Zorro II cards ■ New Ethernet boards
■ POP box delays ■ CPU fixes ■ Daytona cancelled

# Amiga? Games machine?!

**Although Amiga owners have long since derided anyone that simply decries the Amiga as a games machine, gaming is proving to supply something of a renaissance for our machine.**

Hyperion seem to be going great guns with their ports and clickBOOM – who haven't produced a single non-AF Gold award-winning title (what a mouthful!) – are getting ready to release *Nightlong* – a massive game first released on the PC and coming on three CDs.

*Nightlong* is a game that's destined to break new ground for clickBOOM. For a start it's possibly going to be graphics card-only, compared to their previous AGA and graphics card titles, and while they're hoping it will run on low-spec machines – 030 and 16M RAM, the recommended spec is an 060 and 32M RAM.

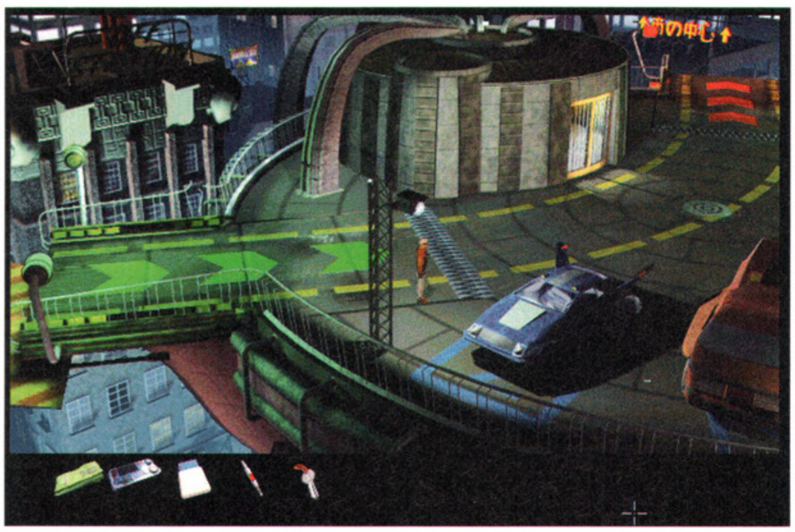
However, the thing that's really going to make *Nightlong* a breakthrough game for clickBOOM is the fact that they are planning a PPC module for it. The module will be available at extra cost but will only be $10CDN (about £4.20 at current rates) for pre-order customers. Even once the game is on sale fully, the cost will probably only be $15CDN or $20CDN (worst case: less than £17). There wasn't the time to find out whether the game would run under WarpUp or PowerUp before news went to press, but we'll let you know in our exclusive review in the next issue of *Amiga Format.* When asked why the extra charge was necessary,

*Nightlong is a game that's destined to break new ground for clickBOOM because the recommended spec is an 060 and 32M RAM*





What's going on? That's the conspiracy and only you can solve it.



Gorgeous graphics, and, let's hope, gorgeous gameplay.

## SPEC FOR NIGHTLONG

| | |
|---|---|
| Estimated release date | Feb. 15 |
| Graphics system | RTG only* |
| minimum CPU | 68030 |
| recommended CPU | 68040 |
| preferred CPU | 68060 |
| minimum RAM | 16Mb |
| recommended RAM | 32Mb |
| CD-ROM | the faster the better |
| sound support | Paula and AHI |

*There is a possibility that the game might also run on AGA



# Month in view...

Merry Christmas? I should coco, despite my foreboding appearance. Since this is magazine land, we're writing this a few days before Chrimble, and I've got news about various things that have cheered me up no end, just in time for the festive season. First of all there's, oh no, I'm not supposed to talk about that yet, never mind. Still, there's... bugger. I can't talk about that either yet. Okay, there's always... nope, not that either. You see it's very frustrating right now. There's not an awful lot of news that can actually be printed, even though there are things going on behind the scenes. I know you all want to know what I know right now, but trust me, if I were to blab my mouth off the whole time I wouldn't be in a position to find out other stuff, stuff that's potentially even more exciting. Tell you what, I'll tell you all about my lovely widescreen telly and DVD player I bought with the proceeds from selling a few of my Future shares. You did buy some didn't you? Okay, it's not really Amiga news, but it did happen this month and it's better than not being able to tell you guys anything at all. Get *Mask of Zorro* on DVD – it's a fantastic movie, much better than *The Mummy*. Oh, and get *The Matrix*, and *The Exorcist*. There, I think that's enough of that.

Suffice to say, with any luck and a following tail-wind, *Amiga Format* will be a very exciting place to be in the coming months, and hopefully we'll impart that through our words making it a very exciting mag to read too. You've held on this long to your Amigas, I'd just like to suggest you hold on a little longer. It'll be worth the wait, honest.

**Ben Vost**









**With a varied range of leading characters, we hope that Nightlong has a decent amount of interaction between player and non-player characters.**

Alexander Petrovic had this to say: "The number of copies we sell will be really crucial for our future PPC support. This will be clearly explained in a few days when we open pre-ordering."

clickBOOM are also producing some special offers for the Christmas season (remember that? Well it's three days before Christmas as we write the news). The first is a trade-in deal. If you have absolutely any commercial shoot-em-up title for the Amiga, then you can order T-zerØ from clickBOOM for half price. They are confident that their top-rated shooter is better than any other Amiga shoot-em-up and they'll prove it by this method.

Other news that clickBOOM have furnished us with is that their auctions are completely free to use for a limited time (until February 13th). You can use their library of pictures to illustrate what they have to sell and there are no fees to pay.



**Will Johan get all of clickBOOM's games, or did he pick the wrong logo?**

Lastly, clickBOOM are also proposing a very strange deal: you get a proper, permanent, needles and everything tattoo saying either "clickBOOM" or "Amiga" somewhere on your body, and you'll get every single game that clickBOOM have ever, or will ever produce for doing so. I'm not sure that this is a good enough reason to mutilate your body, but as we've seen from the letters pages recently, there are enough folk out there who're willing to do it, so let clickBOOM know!

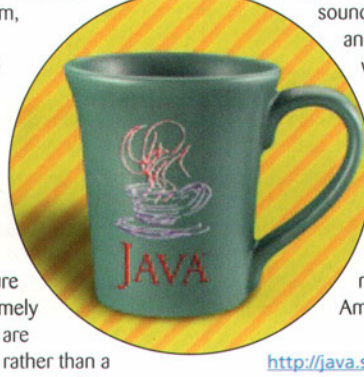
You can contact clickBOOM on their website at: http://www.clickboom.com.

# Java for free

**Sun has recently announced that it would make some of its Java technology available free of charge.**

From January 31st the source code to the Java 2 Platform, Standard Edition (J2SE) will be free. J2SE includes the Java 2 Software Development Kit – the compiler, debugger and tools necessary for Java programming – and the Java 2 Runtime Environment – the JVM and core library classes which allow Java applications and applets to run. This source code has been available under the Sun Community Source License but Sun previously required royalties for any software created using it. The only requirement now is that any modifications made comply to the Java standard. Use of the Java 2 Platform, Micro Edition (for embedded applications) and Enterprise Edition (for server environments) will still involve fees.

Java is a simple but powerful, object-oriented programming language. It is architecture neutral and hence extremely portable. Java programs are compiled into bytecode rather than a platform-specific machine code. This bytecode is then run by a Java Virtual Machine (JVM). Java programs will thus run on any platform with a version of the JVM.




The Amiga is yet to achieve Java capability. Whilst various Java compilers and JVMs have been ported to the Amiga, their usefulness has been limited because of the lack of the necessary runtime libraries or classes. These classes provide Java programs with graphical interfaces, sound, 2D drawing functions and so on. Nordic Global were developing an Amiga-native JVM and foundation classes, but this project has now been halted (see Daytona in doubt). Perhaps the new royalty free status of J2SE will make a Java port to the Amiga more likely.

See http://java.sun.com/ for more details.

**Continued overleaf ➡**

# CPU fixes

Tiny, free, generic utilities make programs that once crashed run reliably on the fastest Amigas.

## PROGRAMS FIX PROCESSORS

Painstaking Amiga developers have uncovered hardware bugs in high-end PPC and 68K processors – and fixed the faults, with software! This is certainly the first time we've encountered a software work-around for an overheating problem.




The 68K fix is not heat-related, but cures a special case neglected by Motorola when the 68060's twin integer execution units get muddled by Byzantine code.

## ROASTED CHIPS

The 'overheating' problem crops up when running programs on a PPC 604e clocked at 233MHz or above. Developers noticed that the fastest PPCs were suffering task-stopping exceptions that did not seem to afflict the slower 200MHz Cyberstorm – especially when running several programs at once.




WarpUp and PowerUp struggled alike – this was no software problem.

When those PPCs get hot, a couple of vital bits in the processor's LR register may be assigned incorrect values, crashing the program by diverting it outside the Amiga's memory space. The fix detects these sporadic glitches, fixes the address and lets the program run as if nothing had happened.

One early tester reported to comp.sys.amiga.programmer that he was at last able to run *Candy Factory*, RC5 crypto and PPC datatypes without annoying interactions. Another was able to decode and play MPEGs while running PPC RC5 for the first time. Previously this heavy-duty combination caused random intermittent crashes.

## SUPERSCALAR

The 68060 fix was first mentioned in the *AF* Stability feature, as a cure for badly-optimised Mac programs that were never intended to run on a 68060, and has since been found to make Amiga programs like Sierra's *Hoyle* run properly. The latest phase 5 68060 support files contain a similar disarming option, CPU060 NSTB, at the request of Fred Wright.

POWERED BY MOTOROLA

The previous workaround, favoured by the Mac emulator Fusion, disabled the second execution unit entirely, but this substantially reduced the speed of all programs on the affected system, including Amiga ones unrelated to the emulator.

The fix is much more subtle, preventing the 'bypassing' of values between the execution units, while still allowing superscalar program execution. The overhead is unmeasurable on most programs, because optimised code does not get into the sort of muddle that bypassing was intended to fix.

It requires a specific sequence and alignment of four instructions that plonk a value in RAM and read it straight back. No human coder would write that, but dumb compilers just might. It's a far more obscure case than the PPC LR one, let alone the infamous Intel Pentium DIV bug (one of many) but the cure is nonetheless welcome as it helps most 68060 Amigas now in use.

## RESPONSES

Motorola have acknowledged that the bypass bug was in all initial 68060 chips, made from design 'mask' F43G; the new mask revisions F10H and F84W fix the fault for LC and full chips respectively. So far the only Amiga product to use the F10H is Eyetech's 75MHz LC060 Apollo special. The mask code is printed on the top right corner of PGA processors. Most Amiga users have the first-try F43G.

There has been no official response from manufacturers to reports of the 604e flaw. This might stem from inadequate cooling on the Cyberstorm PPC, as several people report that a bigger fan also fixes the fault, though that may not be as easily achieved, especially on an A3000. A similar patch might also be useful for APUS, Amiga Linux for the PPC.

The new CPU patches are on *AFCD49*. The WarpUp one is by Frank Wille, the PowerUp fix by Emmanuel Lesueur, and the 68060 code comes from *AF*'s very own Simon Goodwin.

phase 5 DIGITAL PRODUCTS

## 100 issues ago — AF33 April 1992

AMIGA FORMAT




We look at what was going on in the Amiga market 100 issues of *AF* ago...

**■ Cover feature: Get into Motion! Use your Amiga for animation. *AF* uses plenty of pictures of Warner Bros favourites, and even has Felix the Cat on the cover.**

**■ On the disks: Two floppies with the complete version of *Vista* and a demo of System 3's *Myth*, an animation of a *Lemmings* solution, and more.**

**■ News: The A690 (renamed this issue to the A570) due to go on sale in June 91! *AF* is the biggest-selling computer magazine in the UK with an ABC figure of more than 130,000; Ocean, at great expense in time and effort, produced *Robocop3* with a security dongle that they were sure couldn't be cracked – *AF* received a cracked copy within five days of it being launched. Mirrorsoft go bust, Virgin and Electronic Arts pledge to support the CDTV.**

**■ Prices: *VideoKid* – a platform game by Gremlin cost £25.99. *Putty Squad* from Alive costs just £14.99.**

**■ Games reviewed included: *John Madden American Football* (Electronic Arts) 94%, *4D Sports Driving* (Mindscape) 33%, *Storm Master* (Simarils) 90%, *Shadowlands* (Domark) 93%, *Pinball Dreams* (21st Century Entertainment) 84%.**

**■ Serious products reviewed included: Take 2 (Rombo) 80%, Devpac 3 (HiSoft) 95%, Scala 500 (Digital Vision) 82%, Pixel 3D 2 (Axiom) 95%.**

**■ Notes: *AF* did a survey in this issue. It was four pages long and consisted of all sorts of questions – from "how often do you use the following bank services?" to "what sort of car do you own?". There were some Amiga questions too.**

**■ Pages: 228**

**■ Cost: £3.95**

## Product News...Product News...Product News...Product

**NetInfo II 2.5** is out and now handles InterNIC whois redirection.

**TTFLib v0.8.2** out now – bug fixes mainly and speed ups. There are also versions for different processors.

**Candy Factory Pro** gets a new bug fix upgrade to v1.03b

**THOR 2.6a** has been released. The new version has some Y2K bug fixes.

**SecondSpin** – an MP3 encoder is up to v1.85 and now supports more file formats for conversion to MP3 or AIFF..

**MetalWeb 4** is now out and also now a Vaporware product, so it can be got from http://www.vapor.com.

**WarpJpeg datatype** has been released for PowerPC. It's currently much faster than all the alternatives and targetted specifically at WarpUp rather than PowerUp.

**Foundation** receives what may be the final update to v1.27. You don't need to apply older patches to use this upgrade, so if you have a copy of *Foundation* you haven't played in ages, now may be the time to get it out again.

**For those with Power Flyer 4000s**, you should know that *FastATA* is up to v1.5.

**Tore Bjoernsen** has released v0.7 of his PPClibemu emulation of the ppc.library.

Product News...Product News...Product News...Product

# New Zorro expansions

German hardware specialists Kato and Individual Computers have announced new multi-port I/O cards for Zorro Amigas. Both offer cheap Ethernet, serial and parallel ports, but the mix-of on-board and expansion options differs substantially.

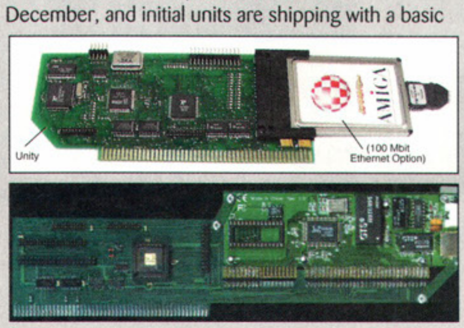
### X-SURF

The key selling point of X-Surf is on-board 10Mb/s Ethernet, said to offer 20-megabit full duplex transfers on twisted-pair cables. It also supports the older BNC coaxial cables. The Zorro card has got five other expansion ports built in, including two A1200-style clock ports, two IDE slots for up to four drives, and one 26-pin port compatible with GoldSurfer and other Individual Computers daughterboards.

The IDE ports might be useful but are unexciting, lacking buffers or hardware acceleration, limited as they are by Zorro II and PIO mode 0. Software support comes from the forthcoming commercial version of IDE-fix, the 'millennium edition', programmed by Oliver Kastl of Elaborate Bytes.

X-Surf hardware production started in December, and initial units are shipping with a basic Sanall-compatible network driver. A custom Miami MNI driver is in the works, to be followed by a NetBSD driver and support for Linux-68K soon after. A programmer is already working on an automatic Samba installation, which Individual Computers hope will be finished in January.

X-Surf sells for 189 DM in Germany, undercutting VillageTronic's Ariadne 2 which opened up Zorro to low-cost Ethernet. The UK price of X-Surf is expected to be £79.95 from Eyetech.




**New low-cost Ethernet cards should provide the impetus for Amiga networking.**

### KATO UNITY

Meanwhile Kato have announced Unity, a multi-port Zorro card which should be available early this year. This promises to bring cheap clock-port and PCMCIA peripherals to big-box Amigas, though existing drivers will need patches to cope with the new card addresses. Unity combines A1200-style expansion grids with conventional multi-IO features.

The Unity board offers an onboard buffered serial interface, a parallel port option, plus the first PCMCIA slot for the Zorro Amiga, and two A1200-style clock connectors. The PCMCIA socket is intended for 10-100 megabit Ethernet (Zorro willing), and Unity will be available bundled with suitable cards and drivers.

The basic Ethernet version supports coaxial and twisted-pair cables, promising 20 megabit full duplex transfers, and has a 16K buffer. The faster board requires twisted-pair cabling and has a 64K buffer. This allows Amiga to share relatively fast networks, though Zorro II limits the practical bandwidth to around 28 megabits per second.

The Unity clock ports are quicker than the motherboard one, benefiting bandwidth-hungry cards like Melody 1200.

# A1200 BOOSTERS

Eyetech have combined the benefits of the AmigaOS 3.5 upgrade, Kickstart 3.1 ROMs and the Amiga Magic Pack in a new bundle aimed at people who want to bring an old Commodore A1200 'games machine' up to the latest specifications. You'll need a CD-ROM drive to install the new AmigaOS, and a screwdriver to fit the ROMs, plus some sort of RAM expansion.

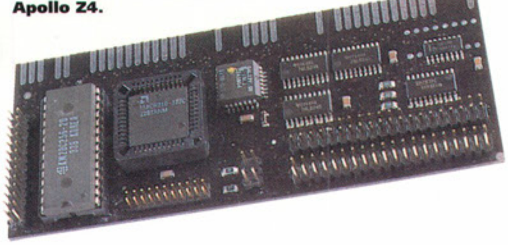
The package includes the set of printed manuals normally shipped with new A1200s made in France, covering the computer unit, bundled applications, Workbench 3.1 and hard drive support. The ARexx and AmigaDOS manuals, reserved by Commodore for big box Amigas, are available separately for a few pounds extra.

The Magic Pack includes a couple of games and nifty (though not the latest) versions of *Personal Paint, Wordworth, TurboCalc* and *Photogenics* (requiring the new Kickstart) plus the Organiser diary and Datastore filing applications, but sadly no *Scala*. The combined bundle weighs in at £69.95, so all the books and packages only set you back £15 over the normal price of an overhaul from 3.0 to 3.5. Treat yourself; call Eyetech on 01642 713185.

# Apollo Z4 gains an edge

The first card for the 'fast Zorro II' mode of Apollo's Z4 expansion bus has been produced by Individual Computers, just ahead of DCE's double-speed CyberVision64/3D. The Buddha Flash Maxx apparently runs about 80 per cent faster than the original Buddha, when in a Z4 'fast' slot. It drives IDE hard drives in PIO mode 3, and is claimed to be almost as fast as IDEfix Express. Eyetech hope to sell it in the UK for around £70. Details from Individual Computers: http://www.jschoenfeld.com.

**The updated Buddha Flash Maxx boosts Apollo Z4.**



Continued overleaf ➡

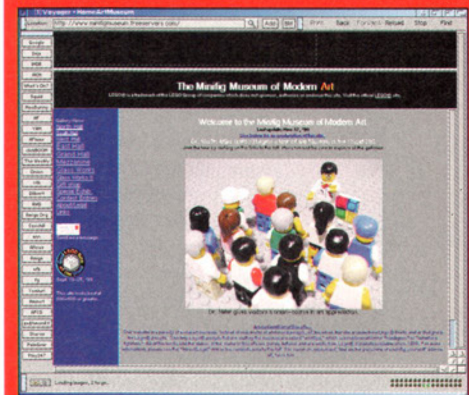
# AF Net Corner

This issue, I shall be mostly doing Net Corner in the style of the Fast Show:

## LEGO GALORE

http://www.minifigmuseum.freeservers.com/
http://www.geocities.com/PicketFence/1438/falcon2.htmw

In't Lego brilliant? You get all these shapes and you can build anything you like! There's blokes what 'ave made whole museums outta Lego! Fantastic! One guy's made a complete Millennium (in't the millennium brilliant?) Falcon! Fantastic!




We're walking, we're walking.

## LONDON USER GROUPS

http://web.ukonline.co.uk/ant.london/
http://www.absurd.demon.co.uk/amilon/details.html
http://uk.amigasoc.org/

User groups? Ooh, suit you sir. In London are you sir? I bet you'd fancy a bit of a get together wouldn't you sir? Yes, you would. Ooh. There's ANT in NorthLondon, sir, and Amilon, for the more laid back computer user. Are you laid back sir? Of course you are. Ooh. There are plenty more to take your fancy, go to the AmigaSoc site, sir. Ooh, suit you sir!




Wider than your average site – it's ANT!

## THEME TUNES

http://tv.cream.org/

So, isn't it strange when you start getting older? You notice odd things, like how policemen are getting younger all the time, how your limbs just aren't as flexible as they once were, and how all those brilliant TV programmes you used to love aren't on the television any more. Fortunately, there's TV cream. Which is nice.




Anyone else remember the original TOTP music?

# POP boards delayed?

Manufacturers hoping to build motherboards based on IBM's open source POP design are likely be delayed by three months. IBM say that this is because the production of key components has been held up.

The north bridge chip, the part that handles communications between the PPC processor and the PCI bus, has proved to be more complex to design and debug than had been expected. The south bridge chip, which handles much of the other peripheral communications, is being produced by Winbond Electronics Corp, a Taiwanese chip manufacturer, and has suffered set backs because of last year's earthquake in Taiwan.




We first talked about POP in AF131, but delays mean that we might not mention it again for a few months.

IBM claim that they will have the first hardware in January and that boards will be available for customers in March. Prophet Systems, who are fabricating three different POP-based boards, say that they can work around the delays. They hope to have their own bridge chips availble by the end of Q1. Take a look at: http://www.eternalcomputing.com/psys/.

# Daytona in doubt

Nordic Global has cancelled its Daytona project, which was to be an Amiga-native implementation of Java.

The reason for the Daytona's cancellation is that Holger Kruse, the man behind Nordic Global, is to begin work full-time for REBOL Technologies, the company set up by the AmigaOS designer Carl Sassenrath. REBOL is an innovative scripting language with support for messaging and Internet protocols and is available on over 50 platforms including the Amiga. Kruse has stated that, besides no longer having enough time to work on Daytona, he feels that since Java and REBOL are competing technologies it would be unethical for him to continue to develop Java-related software.

Holger Kruse says that he intends to "find a solution that will…allow the existing Java VM of Daytona to be released to the Amiga community…" without his involvement. Since Sun have announced that the Java source will be available royalty free (see the story on page 7 for more information), perhaps it will be now prove easier for someone to take over development of Daytona.

Development and support of most other Nordic Global products will be unaffected, most notably *Miami*, *MiamiDeluxe*, *MiamiSSL* and *AmiWin* (the Amiga X server). *Miami 3.3* is planned for release later this year. Due to Holger's change of address, however, the server which handles *Miami* registrations will suffer some down time.

Go to Nordic Global's website at http://www.nordicglobal.com for the full story.

# A600 SURFER

Jen's Schönfeld's Individual Computers have made an adaptor that allows clock-port peripherals to be connected to the A600. The premier application is serial port acceleration – the adaptor fits on the A600's Gayle chip and lets you plug in the tiny Silver Surfer board and use it as you would on an A1200. A similar approach vould be used for other clock-port expansion – perhaps even 16-bit sound cards – although those are likely to require a faster processor than the A600's stock 68000, and probably a socket adaptor too. Details from Individual Computers, http://www.jschoenfeld.com.

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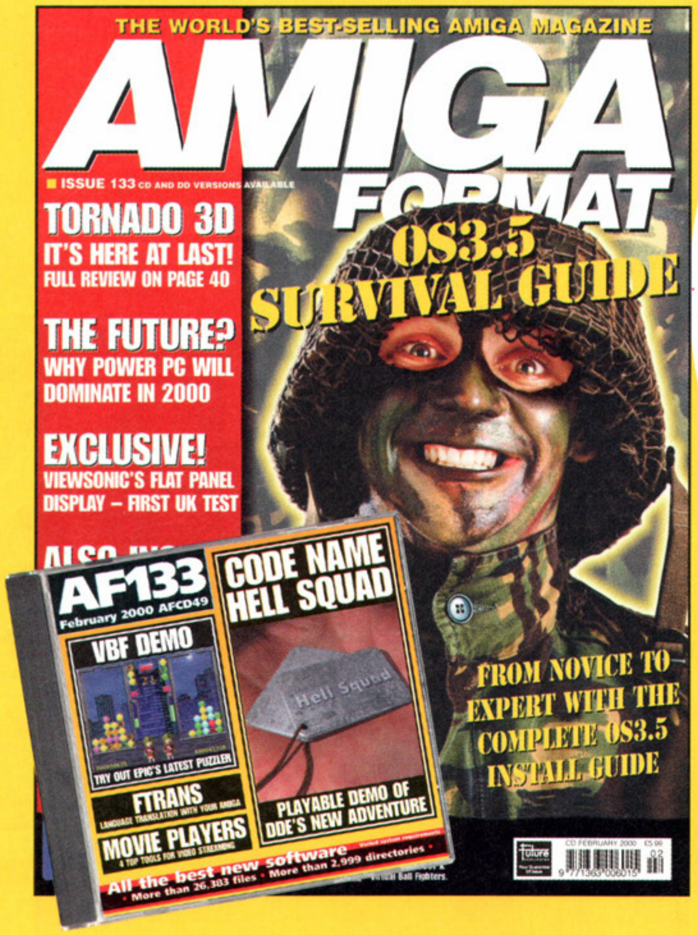
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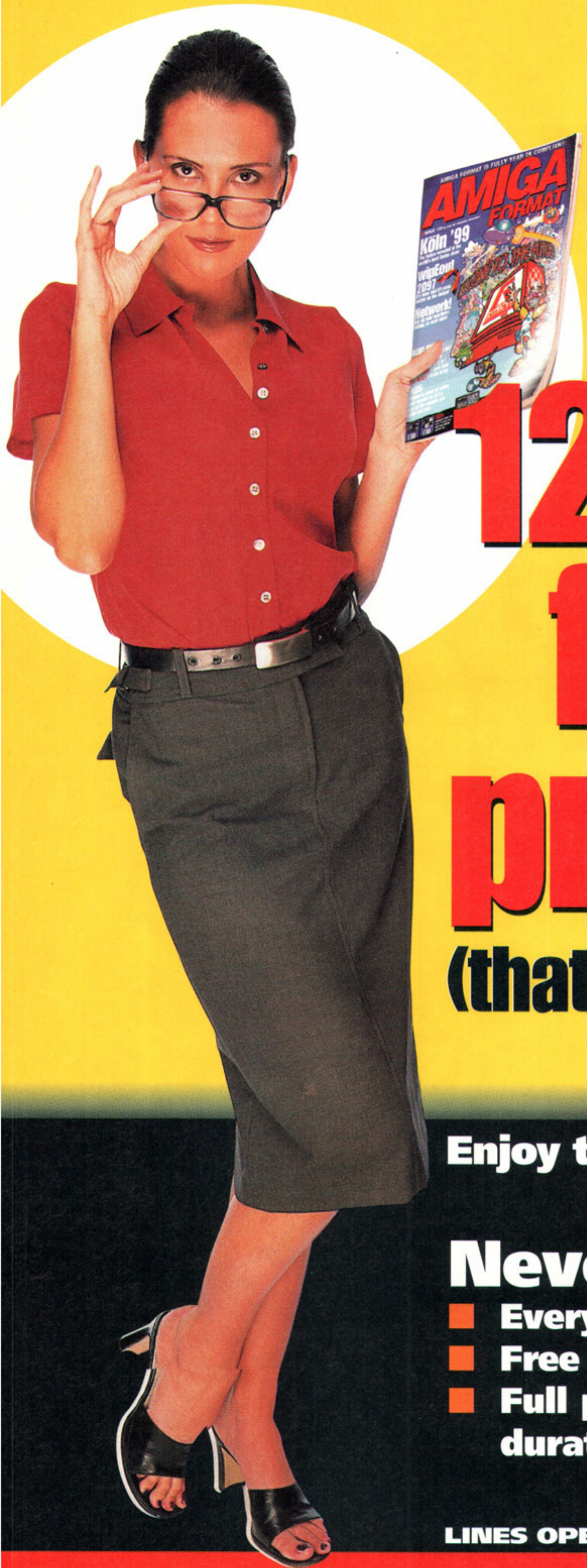
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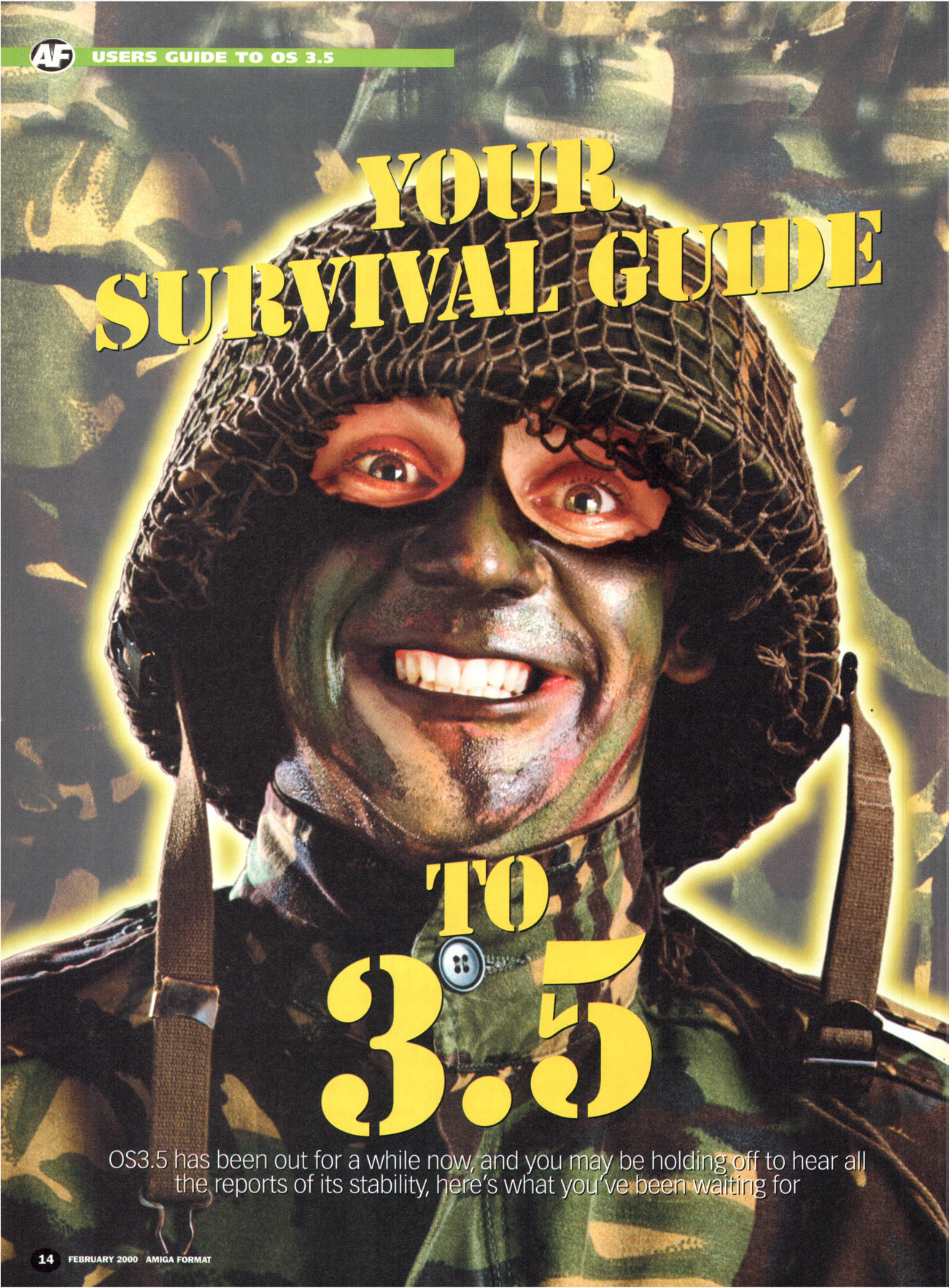
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# YOUR SURVIVAL GUIDE TO 3.5

OS3.5 has been out for a while now, and you may be holding off to hear all the reports of its stability, here's what you've been waiting for




**Your first look at OS3.5. Inside lurks all manner of wonderful things – install!**

History tells us that OS3.5 came out on October the 18th, and the earliest you'll be reading this, unless you have access to the top secret *Amiga Format* offices located at the bottom of a lake somewhere in Europe, is January 10th, or the 17th if you don't subscribe. That means that three months have passed since the OS came out, and there's also probably been a "boing bag" of assorted bug fixes and updates since the OS was launched. It's been six years since a new release of the Amiga operating system was available on all machines, but even so. Anyway, this guide is for those of you who have been living in a cave for the last three months – hiding away from law enforcement agencies; feeling silly after the world didn't end just before January 1st started; or merely anticipating the complete breakdown of civilisation, rioting, dogs and cats living together, petrol costing a fiver a gallon and Celine Dion actually releasing a listenable record.

## TESTING THE WATERS

In *Amiga Format*'s privileged position as part of the OS3.5 beta testing team, we've been getting the updates to the OS as they happen (they're up to 39 at the moment), so we've been using the very latest version of OS3.5 the whole time and we haven't looked back – *AF* hasn't come to a standstill once. However, there are a few things you should watch out for when installing the new OS that we thought were worth a wider airing, hence the feature.

*If you've been living in a cave for the last three months then you'll want to know how to install OS3.5, especially as we'll be using it more on our CD*

When we reviewed the finished version back in *AF131* we advised that you should install OS3.5 on a fresh partition and move stuff across piecemeal so you could check each thing works okay, rather than simply installing OS3.5 over the top of your OS3.1 installation and complaining when things start falling over. However, since there have been few complaints about the general stability of the OS, it seems that this method might be too cautious for some of you. Even so, we would still advise that a clean install is always going to be more reliable than installing it over the top of some years-old installation of a previous OS. A good compromise, that I used myself at home, was to move all your old OS files into a drawer on the partition you intended booting from and installing OS3.5 onto that partition. Admittedly you lose the ability to easily boot from a previous OS, but it does mean that moving files you want to test to and fro is swifter and easier (since moving files in the same partition is practically instantaneous compared to having to copy them from one partition to another). Of course for this to work you really need to have enough space on this boot partition to hold both versions of the OS – that's 20M for OS3.5 (if you have all the pics and everything) and however much you currently use for your existing Workbench. Obviously the joy of simply moving stuff is that you won't duplicate files between the OSes and you'll always know what you've moved across and what you haven't. With any luck you should rapidly end up with an almost empty "old OS" drawer on your shiny new OS3.5 partition.

## OS CAMOUFLAGE

If, like Rich and myself, you are used to running a Workbench Replacement rather

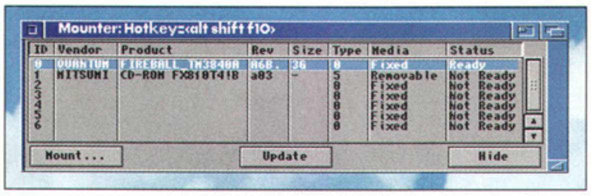
**Continued overleaf ➡**

## SETPATCH NIGHTMARES

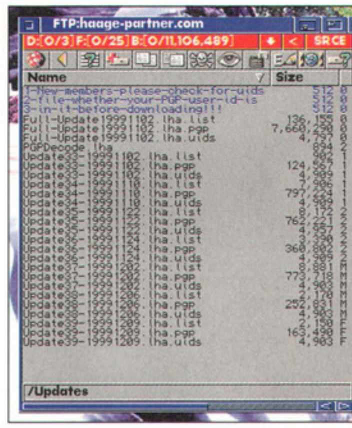
**The biggest problem we've been told about by users is the confusion caused by the new SetPatch. If you're using a controller other than the built-in scsi.device, then you'll either have put in the argument SKIPROMUPDATE on the setpatch line, deleted or renamed the NSDPatch.cfg files in DEVS: or both (if you haven't, you should). But some controllers do work with SetPatch as standard, however, you need to edit your NSDPatch.cfg file to uncomment the line that refers to your controller. Here's a few popular examples:**

```
#DEVICE 2060scsi.device   DEVICETYPE NSDEVTYPE_TRACKDISK  COMMANDS
1-15,20-23,28¶
#DEVICE 1260scsi.device   DEVICETYPE NSDEVTYPE_TRACKDISK  COMMANDS
1-15,20-23,28¶
#DEVICE 1230scsi.device   DEVICETYPE NSDEVTYPE_TRACKDISK  COMMANDS
1-15,20-23,28¶
#DEVICE cybscsi.device   DEVICETYPE NSDEVTYPE_TRACKDISK  COMMANDS
1-15,20-23,28¶
#DEVICE squirrelscsi.device    DEVICETYPE NSDEVTYPE_TRACKDISK
COMMANDS 1-15,20-23,28 VERSION 37 REVISION 1765¶
#DEVICE cybppc.device   DEVICETYPE NSDEVTYPE_TRACKDISK TD64
COMMANDS 1-15,20-23,28¶
```

**To uncomment any of these lines, simply remove the hash mark (#) at the start of the line.**




**Mounter comes with Workbench and is an up-to-date version of Martin Blatter's SCSIMounter.**




**A top-secret glance at the OS3.5 beta-testers' archive hidden away on an FTP server somewhere in the world.**



## THE BOING BAG

**The Boing Bag is the name given to the set of bug fixes and minor improvements that Haage & Partner will hopefully have released by the time you read this. It will be a free update and changes to the OS in the Boing Bag will include some of the following, along with general improvements:**

**asl.library: The library will now calculate sizes based on 1024 base rather than 1000.**

**Exchange: Better layout and more stable.**

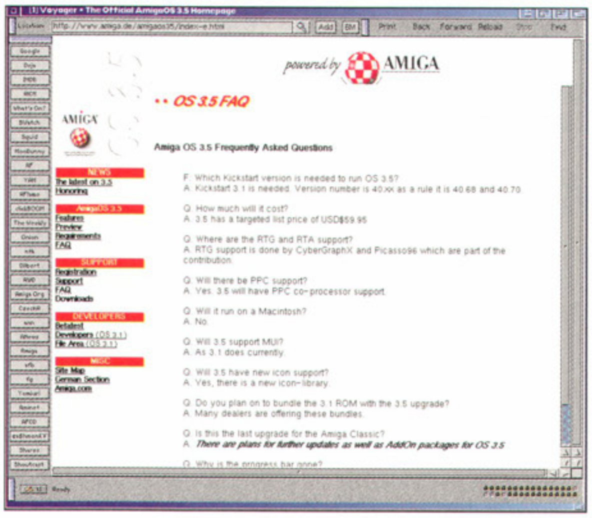
**IconEdit: Better remapping of high or true-colour pictures.**

**Sound Prefs: Fixed problems with user-selected pitch when a sampled sound is loaded.**

**ShowConfig: Now contains more manufacturer identities.**

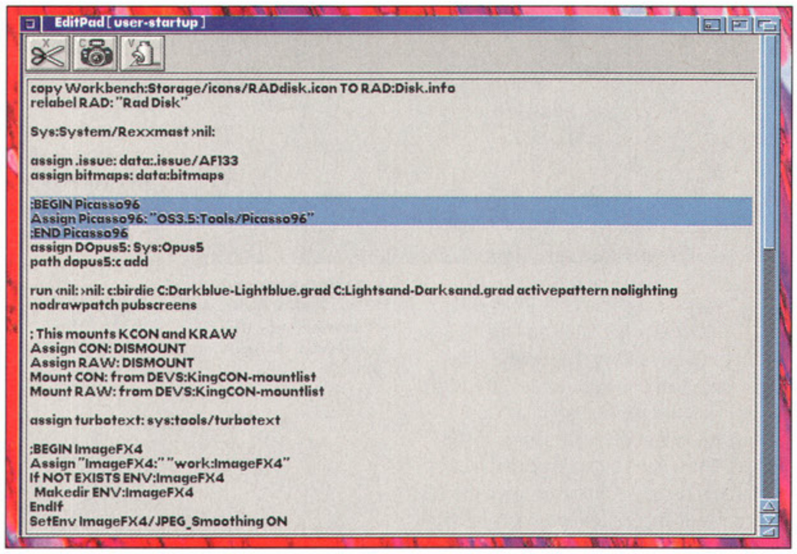
**workbench.library: Simplified the progress gauge which also makes it more accurate, volume size calculation now uses 1024 bytes as a base, allows snapshotting of volumes without an icon, better memory allocation (especially for copying).**

**It doesn't seem like much, but remember the Boing Bag is only a set of bug fixes, the new features will start appearing in OS3.6 shortly.**

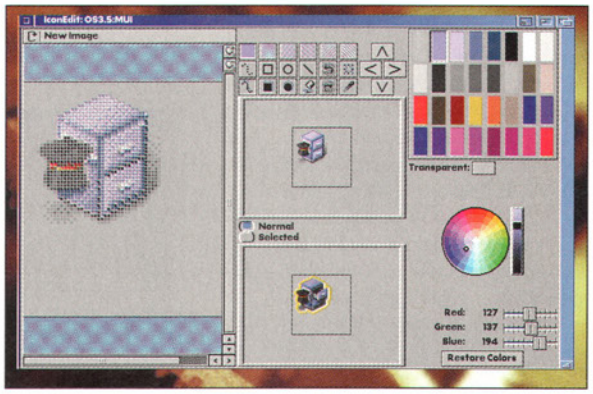



**The Amiga website will be the place to look for any updates or bug fixes to the operating system.**




**Editpad is another new tool included with OS3.5 – it's a text editor ideal for your startup-sequence.**




**IconEdit 3.5 is much better than its 3.1 counterpart.**

than Workbench itself, you'll find that not much changes compared to your system running under OS3.1 or 3.0. Rich is still running *Scalos*, I'm still running *DOpus*, so we don't really get to see the new icon info windows that often, or use the keyboard control of icons or the new menu items. However, there isn't any trouble running ARexx scripts for Workbench, or performing any of the other new tricks that OS3.5 is capable of. *Scalos* still isn't able to display OS3.5 icons properly, and you still need newicon.library to display newicons, however, now the program's development has been taken over by Satanic Dreams Software, there should be fixes to these problems in the pipeline.

The latest versions of *Directory Opus* had similar problems, but a patch is available (it's on our CD again this issue). However, there's some debate over whether or not a patch should have been necessary, since the new icon format will break more than a few older applications that will never be updated. That notwithstanding, the new



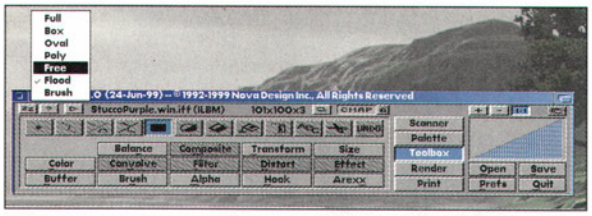

**Scalos users can look forward to an update to make it more OS3.5 compliant some time this year.**




**If you use DOpus, you won't get the new icon info requester.**

## EMERGENCY – CALLING DR BEAT

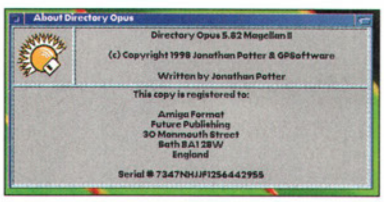
**If you ever have a problem with your hard drive losing its RDBs, you can avoid the problem in future by simply using HDToolbox's new RDB features. Save your RDB onto a floppy. If you lose your drive's RDB, boot from your Emergency disk and load HDToolbox, then load your RDB back in and you should be fine.**



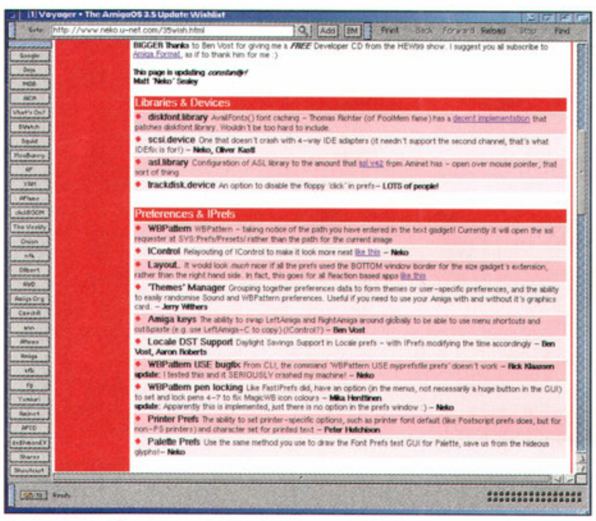

**At the time of writing this feature, ImageFX was still having problems related to ReAction.**

icon format does allow for more interesting icons and, with the new IconEdit program, the Amiga finally gets supplied with a decent icon editor.

Not only that, but we will no longer have to worry about telling you to brave the shell to use ED to edit your user-sequence (because you've got *EditPad* included in Workbench), or downloading *SCSIMounter* (because you've got *Mounter* in Workbench) to check that your devices are all available. You should still have a copy of *SnoopDOS* to hand (fortunately it still works extremely well under OS3.5), and probably a tool like *ARTM*, *XOpa* or *Scout* in order to get rid of windows and the like that you no longer want. Reports are varied as to the performance of OS3.5. Some people reckon it's slower for them than 3.1 was, but most seem to think that it actually feels faster, more stable and prettier than the previous version, including me an' Rich. At the risk of repeating myself, further development of any kind depends on it selling well, so you should upgrade if you can. Our CD will move more toward OS3.5 starting with the next disc which has OS3.5 or standard icons on it (no more NewIcons) for the main drawers and so on, but will probably get more and more OS3.5 dependant as time goes on, since the new release of the OS allows us to do more with the CD.




**DOpus users can relax safe in the knowledge that version 5.82 is already OS3.5 compliant.**




**Matt "neko" Sealey's OS3.5 wishlist website is good to visit if you have ideas you think should be included in the next version.**

### EXTRA RATIONS

By the time you read this, the "boing bag" of assorted updates, patches and bug fixes should be available. We will of course include it on our CD for those that don't have access to the web, but if you do, keep an eye on http://www.amiga.de for updates. As to the future of the OS, Haage & Partner are keen to carry on working on the OS, bringing out a v3.6 sometime in the middle of summer, and if the POP motherboard idea works out (qv. the Köln show report last ish), then an OS4.0 specifically for the PowerPC will be coming late 2000.

In addition, if you are on the web, you could do worse than visit Matt Sealey's update suggestions list at http://www.neko.u-net.com/35wish.html Matt has been collecting suggestions for what should go into the next revision of the OS since it first came out and the beta testing team for OS3.5 have been keeping a careful eye on the site to see which suggestions are feasible.



Just like *Babylon 5*, OS3.5 provides Amiga-using mankind's last best hope, maybe not for peace, but for a sustainable future. This isn't like the OS2.04/OS1.3 debacle, where things were broken by bad programming practices – things have moved on from there. OS3.5 is a stable, quality addition to anyone's machine – you can't call yourself a true Amiga user if you don't have it.

Ben Vost

## PROBLEM PROGS

**The number of apps that cause or are subject to problems under OS3.5 is astonishingly few really, especially considering the fact that it's been more than seven years since the last OS revision. However, there will always be a few things that don't work nicely. These are all the ones we can find. Some of them have solutions, some don't:**

### ImageFX 4

**ImageFX now uses ClassAct for some of its gadgets. Unfortunately, it doesn't like ReAction, the renamed ClassAct that is standard in OS3.5. The problem should have been fixed with a patch by the time you read this, but if you are at all familiar with ImageFX, it shouldn't be a problem anyway – the gadget's still there, just invisible and the pop-up will still appear, just a bit disjointedly. Apparently you can get around it by copying back the original ClassAct gadget, but it's not really worthwhile, since it may cause problems with other software.**

### Visage

**A few people have reported problems with this image viewer. However, it still works for us, on a variety of machines, so we're not really sure what the problem could be.**

### WBStartup+

**Again, just a cosmetic problem. WBStartup+ doesn't like the new icon format for OS3.5, so as your WBStartup items get loaded you only get old icons. This is only a problem if you have icons that have no old-style icons. It's unlikely that this one'll be updated, however, as the current version 2.8 is already several years old.**

### Wordworth (and others)

**A number of icons cause a problem with Workbench's new "start from" setting. In OS3.5 you can specify if an icon should be run from Workbench, as a Shell program or as an ARexx script. However, a few programs pre-dating OS3.5, including Wordworth, have icons that have spurious data in them that only shows up under OS3.5. Basically, rather than being set to start from Workbench, the Wordworth icon is set to run as an Arexx script. The fix? Simple, just adjust the start from gadget in the Icon Information window.**

**If you have any others you'd like to tell us about do email us so we can keep track of all the problems.**

# POWERPC OS

# Power to the future

Having a new processor is all very well, but what if you couldn't run any of your existing software on it? Richard Drummond examines the choices we're presented with

The PowerPC architecture is the future of the Amiga: I think it is safe to make that claim now. Amiga, Inc.'s now defunct revolutionary plans might have conspicuously lacked any room for the PPC platform, but the Amiga community has continued its sauntering migration to this processor anyway.

This migration may still be a long way from an exodus, but the momentum has been building in recent months. AmigaOS3.5, the long-awaited update to the operating system for existing machines, is supplied with WarpUp, Haage & Partner's minimal PPC kernel. We've now had the first PPC-only game, *wipEout 2097*, with several more projects near completion. And, with any luck, the longstanding promises for

PPC-only hardware will soon be fulfilled.

What most people seem to overlook, however, is what operating system we will be running on this new hardware and how compatibility with existing software will be achieved. Met@box, developers of the amiJoe G3 cards, seem to be ignoring software issues altogether, while phase 5 are being blasé about their partnership with QNX. QNX, on the other hand, have said they won't start porting their OS until they get hardware from phase 5, hardware which has been repeatedly delayed. Only Haage and Partner are frank about their plans for the future of AmigaOS: they are keen to port our existing operating system lock, stock and entirety to the PPC and use IBM's POP reference design as the basis for a new Amiga motherboard.

## WHAT WE WANT TO KEEP

Let us imagine that we have a PowerPC computer. It could be an existing Amiga with a phase 5 G4 card or it could be an entirely new motherboard, but, for the sake of argument, let's call it an Amiga. What operating system would we like to run on this machine? The choice for most Amiga users would be a PPC-native version of AmigaOS. The one snag here is that it doesn't exist yet. There are plenty of alternatives, though. By what criteria shall we judge these prospective successors as an operating system for PPC Amigas? For any OS to be considered worthy of filling AmigaOS's shoes, it must offer a sufficiently Amiga-like experience. We can simply sum up the Amiga look and feel as efficiency, ease-of-use and flexibility. We could try to analyse these three principles separately, but, in truth, they are heavily interdependent.

*Amiga OS's efficiency is legendary: it is frugal with system resources such as memory, disk space and CPU time and provides peerless multitasking*

AmigaOS's efficiency is legendary: it is frugal with system resources, such as memory, disk space and CPU time. It provides peerless multitasking due to low system overheads on processes and rapid message-passing between processes. Code modules can be shared between many programs, thus reducing executable size and memory requirements. These so-called shared libraries are only loaded on demand and can be flushed when no longer required further decreasing demands on memory.

This efficiency means not only that the Amiga is an extremely usable system even with out-dated hardware, but it provides a more comfortable environment for the user. Unlike some other 'modern' OSes, with the Amiga the user is always the focus of attention. Even under heavy system load, the Amiga interface gives visual feedback in response to mouse-clicks. The mouse pointer doesn't judder or freeze during disk access and windows don't block user input unless necessary. Hence, AmigaOS doesn't frustrate the user like rival systems.

Intuition, the Amiga's graphical interface, is well named. Although it is showing its age, software which adheres to its design principles is self-evident to use. And despite needing to be improved with the addition of more modern standard GUI elements (although Reaction in OS3.5 is a step in the right direction), it should not be forgotten that the Amiga pioneered concepts like drag-and-drop, proportional scroll bars, the two-button mouse and hidden pull-down menus.

There are also features which are unique to the Amiga. The Amiga's concept of screens, for example, provides independent work spaces that can be more efficiently tuned to the needs of specific applications and can be easily flipped between by the user. Tasks can be logically separated to different screens, obviating the need for a single, cluttered display.

Another aspect that makes the Amiga GUI stand out is that it is such an integral part of the operating system, not a bolt-on afterthought. But despite this tight integration, AmigaOS is a highly modular system. This modularity adds to its simplicity – but also the degree to which it

Continued overleaf ➡

## A TALE OF TWO KERNELS

**To choose the right path for the future, it is perhaps best to first examine where we are now are now. Currently, a PowerPC Amiga means an existing 68k-only machine with one of phase 5's PowerUp boards, accelerators which possess both a 68k and a PPC processor.**

**While this may have once been an ingenious solution to the problem of software compatibility, these dual-processor boards are now holding the Amiga back. The necessity of sharing memory between two incompatible processors adds to the cost and complexity of the system.**

**Not only that, problems of cache coherency between the two processors incurs a performance penalty: the speed of the PowerPC CPU is crippled by the lack of a second level (L2) cache and, due to the lack of a full PPC operating system, any useful PPC program needs services from the 68k AmigaOS, thus requiring an expensive context switch.**

**The current situation is further complicated by having two incompatible software alternatives for running the PowerUp hardware: phase 5's PowerUp and Haage and Partner's WarpUp. Both are minimal operating systems which provide just about sufficient services for multitasking, memory management and interprocess communication. Both are competing systems in that only one of the two systems may be used at a time. Thus, software written for PowerUp can't be used simultaneously with software written for WarpUp (although emulation of the PowerUp API under WarpUp is experiencing a degree of success).**

**WarpUp seems to be emerging as the victor of the PPC kernel wars, but the battle has had a detrimental effect on the success of the PPC Amiga platform. Users and developers alike have been confused and discouraged. Unfortunately, it looks like the dichotomy between PowerUp and WarpUp is destined to be repeated on a larger scale for PowerPC-only Amiga hardware.**

## GOING NATIVE

**In a perfect world we would have a PowerPC-native version of the current Amiga operating system. This is what everybody wants, what the irrepressible Petro is dying to see and what Haage and Partner want to produce. But however much we wish it, we should not underestimate the scale of the task.**

**It is not just a case of converting the AmigaOS source code to run on a PPC processor. One has to take account of the fact that the target hardware would no longer be an Amiga as we know it. This should not be seen as merely a problem, however. It is an opportunity to break AmigaOS away from its hardware-dependence. For example, the graphics library would need to be modified to use plug-in drivers for different graphics chipsets instead of being tied to the Amiga custom chips. The workload could be kept to manageable proportions by initially supporting only a small hardware set, perhaps only two or three graphics cards, and LinuxPPC could always be used as a basis for hardware drivers.**

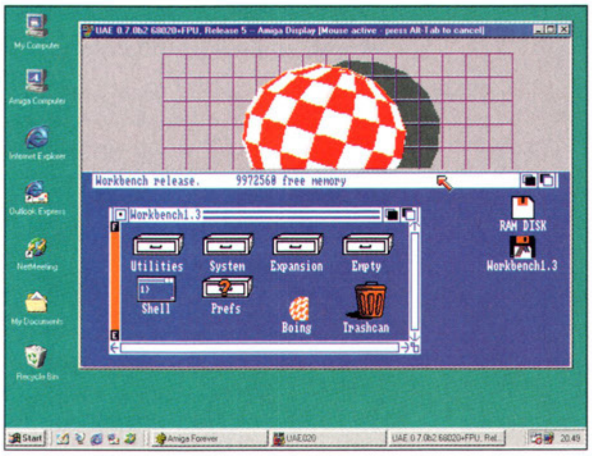
**The clear advantage of a PPC version of AmigaOS is that it satisfies all requirements for an Amiga-like OS because it would be AmigaOS. For the project to be completed in a realistic timescale, the implementation of new features should be resisted. But the porting could be done in such way that new features could be added at a later date. Memory protection and multiuser capability can be added to the existing AmigaOS with varying degrees of success. AmigaOS PPC could be built with an open mind to these concepts.**

**Backwards compatibility could be achieved by extending the Amiga's current executable file format. AmigaOS 68k and WarpUp binaries could then be simply detected and run with the appropriate degree of emulation. Translation of calls to their respective APIs would be easy, because AmigaOS PPC would provide almost identical APIs.**

**Of course, all this is speculation until Amiga, Inc. themselves give the green light to the project, decide to open source AmigaOS or someone gives Gateway an offer they cannot refuse for their the Amiga subsidiary. We can dream, though.**

can be extended beyond its design. It is this that has allowed AmigaOS3.0/3.1 to live years beyond its expected lifetime. Not only does the core API allow easy modification of OS functions, but whole system components may be easily replaced.

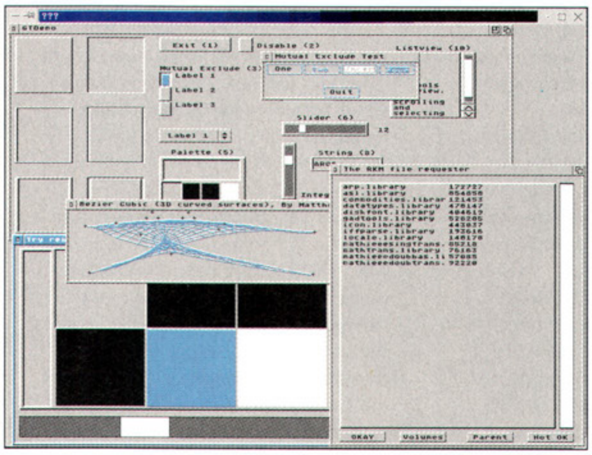
The above elements are all part of what makes the Amiga special and, if possible, are elements we would like to see replicated in an operating system for future Amigas. Clearly, a PPC-native port of the existing AmigaOS would give all of these. But an alternative OS may offer a sufficient set to be deemed Amiga-like.




**Hopefully the future of AmigaOS will be something more than emulation via UAE.**

## WHAT WE STILL WANT TO USE

Whatever operating system Amiga users choose to run on their hypothetical PPC Amiga – whether a straight port of AmigaOS or something different – a solution will have to be found for running existing Amiga software. I mean by this not only the vast majority of Amiga programs designed to run on 68k machines but also, if possible, software written for PPC Amigas. Due to its hardware-independent nature, WarpUp software could be made to run fairly easily under any PPC operating system. PowerUp software, on the other hand, is tied more closely to the PowerUp hardware, so could prove more problematic.



**This AROS screenshot shows programs that use Amiga GUI functions being translated to X under Linux-m68k.**

Emulating the 68k processor as used in existing Amigas is no great problem. It is not rocket science, after all. Motorola, Apple and others have been providing solid 68k emulation for years. Moreover, Haage and Partner already have a working emulator that runs under WarpUp. Speed is not an issue here, either. On a simple emulator a G3 PowerPC processor should manage around 060 speeds depending on the nature of the application being emulated. If dynamic compilation techniques are used, such as in Apple's emulator, speeds of about three to five times this should be possible. Emulating a processor alone is not sufficient, however. We also need to furnish an environment in which emulated software can run.

One answer is *UAE*, the *Universal* (to some UNIX, to others Unusable) *Amiga Emulator*. *UAE* is a software solution which emulates the entire Amiga hardware – processor, custom chips and all – and so is capable of running the current AmigaOS and, under this, most software. *UAE* is eminently portable, so will provide Amiga compatibility for whatever host operating system we choose, but it is a rather brute-force method. The Amiga community has been looking for ways to divorce itself from proprietary Amiga hardware. While *UAE*'s level of compatibility is necessary for playing hardware-bashing games, it is significant overkill for running OS-friendly software. Besides which, we would desire a more integrated experience. *UAE* provides emulation in an environment separate from the host operating system. What we want is to be able to run any old piece of Amiga software from the host desktop without caring whether it runs natively on the machine's processor or via emulation.

Another possible answer to backwards compatibility is the AROS (Amiga Research Operating System) project. The goal here is to provide Amiga compatibility on several levels: a *UAE*-like full emulation of an Amiga system, binary compatibility (in which Amiga executables can be run under any operating system, if necessary via a 68k emulator) and source compatibility (in which existing Amiga programs can be re-compiled to run natively under the host OS). AROS is still far from completion and is of dubious legality, but the latter two routes to compatibility are the most interesting and are the sort of the thing we are looking for.

What we want is a translation layer, so that any calls to AmigaOS are converted to use services from the host operating system – whether it is a PPC-native AmigaOS, QNX or whatever. A program that uses AmigaOS to open a window, will instead open a window on the native GUI and so on. We don't need to run the entire AmigaOS 3.x. The program's 68k code is emulated if necessary, but OS routines are converted to equivalent OS routines of the host. Emulation of WarpUp software could work similarly, without the extra overhead of interpreting the 68k program code.

Backwards compatibility should not, then, be an insurmountable obstacle to whichever PPC OS we plump for.

## WHAT WE'D LIKE

Even the most ardent Amiga enthusiast would admit that the current operating system has some defects. By moving to the PowerPC, surely we can address some of these – either by choosing an OS which has these features already, or by correcting the omissions in the process of porting AmigaOS.

One of the prime concerns is a lack of security. In this vein, memory protection is a concept that is often bandied about as a desired feature for AmigaOS. What is it and is it possible? Memory protection (MP) is any of a variety of schemes whereby the memory allocated to one program is protected from access by other concurrently running programs. The advantage is that illegal memory accesses are trapped to prevent a program running amok and causing others to crash.

## THE ALLIANCE

**If any OS deserves the title of successor to AmigaOS then perhaps it should be QNX. It is similarly efficient with system resources and is modular like AmigaOS. The extra that QNX brings is that it is a real-time operating system: its stability and guaranteed responsiveness means that it safe when such factors are critical. It is highly scalable too. OS modules can be chosen to provide only those services which are required for the desired application. Such features mean that QNX is a leader in embedded markets, but are also ideal for a multimedia desktop operating system. Not surprisingly, QSSL are looking to break into this market.**

**QNX was on the lips of every Amiga user when Amiga, Inc. announced that they would be providing the basis for the AmigaNG operating system. Amiga jilted them for Linux, but the QNX story doesn't end there. phase 5 are now in partnership with QNX; they will be providing a port of their OS for phase 5's G4 cards and their own next generation project, the AmiRage. This OS will also be provided free of charge for owners of current PowerUp accelerators.**



**Is not AmigaOS, but QNX obeys many of the Amiga principles. Could this be the future of the Amiga?**

**It seems an ideal situation: a modern CPU with a modern operating system. It seems just what Amiga users have been clamouring for. One problem is how backwards compatibility will be achieved. phase 5 are being rather cagey about it: their website makes glib statements about legacy compatibility with no mention of the mechanics. Will it just be a derivative of *UAE* or will it be something more interesting? I suppose we'll just have to wait and see.**

**Whatever happens with the phase 5 deal, the QNX technology could be the basis for an exciting desktop operating system.**

At the most drastic level, MP provides each program with its own virtual memory space – it makes it impossible for one program to access another's space. Such a draconian scheme would not be possible for AmigaOS – its efficiency is borne of sharing code and data between processes. This does not mean that MP is impossible, it just means that one has to be careful of how it is enforced.

> *If several programs could operate simultaneously on the one computer without interfering with each other then so could several users*

For example, it might seem sensible to decree that any segment of memory-holding program code is to be write protected; after all, a program doesn't need any modification once it has been loaded. However, despite guidelines to the contrary, some software does alter its own code during execution or may even store data in its code hunks. Such a blanket block on writing to code memory would cause such software to fail.

On the other hand, it would be perfectly feasible to implement a faculative memory protection scheme, whereby a program can choose to make any memory chunks it allocates either fully accessible to other processes, accessible for reading only or not accessible at all. Such a system is afforded by WarpUp's memory management and could even be implemented in the existing AmigaOS in conjunction with THOR's mmu.library and some modifications.

If AmigaOS were made more stable in this way, it could then become sensible to make it a multiuser environment. If several programs could operate simultaneously on the one computer without being able to interfere with each other, then so could several users. The exec.library would have to be modified to allow ownerships on tasks and dos.library and the filesystem for ownerships on disk objects. This is not as difficult as it sounds and has already been proved possible with the shareware *muFS* package. While we are talking about filesystems, one area that clearly needs addressed is the standard filesystem, *FFS*. This needs to overhauled to increase its speed and robustness.

Although AmigaOS's multiprocessing capability is superb, it could still be improved, perhaps by implementing a dynamic scheduling algorithm. The scheduler is the kernel process which decides which task is to run next. A dynamic scheduler gives CPU time to a process based on its history of CPU usage rather than just a static level of priority. Dynamic scheduling has already been proven to be feasible with the existing AmigaOS thanks to the third-party Executive package and, again, WarpUp implements a similar system.

## MAKING A CHOICE

When you come to choose which PPC Amiga hardware your cash will buy you, you should think long and hard about the software issues too – not just drool over the one that simply gives you the most MIPS. Which operating systems can you run on this hardware, and which one out of these would you want to use? Is it Amiga-like? How does it achieve legacy compatibility? What effect will your choice have on the struggling Amiga market? Be clear that the Amiga is yet again reaching a fork in its path. Hopefully, we can all stick together and follow the same route; I don't think the Amiga community could survive splitting into several factions.

Hopefully, with a little cooperation from Amiga, Inc. and a little luck from the Gods, we could all be running AmigaOS natively on cheap, fast and open PowerPC hardware.

**Richard Drummond**

## THE OPEN SOLUTION

**The main reason for IBM allowing the open use of its POP (PowerPC Open Platform) reference design is to advance the PPC as a platform for Linux. If POP is the hardware basis for new PPC-only Amigas, then these machines will be able to run Linux too. In fact, current PPC Amigas can already run Linux thanks to the LinuxAPUS project. The question is whether we would want to run Linux on our PowerPC Amigas. Not if there were a better alternative would be the answer.**

**GNU/Linux is a free, UNIX-like operating system. Its advantages are its stability and the amount of development currently taking place. The momentum beyond Linux is quite phenomenal. Quite rightly, Jim Collas wanted to tap this momentum when selecting Linux in favour of QNX as the OS kernel for the ill-fated Amiga MCC. It is not all good news, though. Linux is entirely un-Amiga-like. The Linux kernel is monolithic not modular like AmigaOS. The standard Linux user environment is unfriendly and unintuitive, thanks to its UNIX roots. And the standard GUI, X, has long passed its sell-by-date. Even on a powerful machine, it does not create as smooth a user experience as AmigaOS does on meagre hardware.**



**Love it or loathe it, Linux is currently the only full operating system that you can run natively on PPC Amiga hardware.**

**Linux should not be blindly ignored, however. There are many things that can be learned from it. The PPC AmigaOS should provide a POSIX interface so that all the great GNU tools and applications can be ported trouble free. Also, the pace of development of the Linux kernel is such that many of defects could be corrected in the near future.**

## THE OUTSIDER?

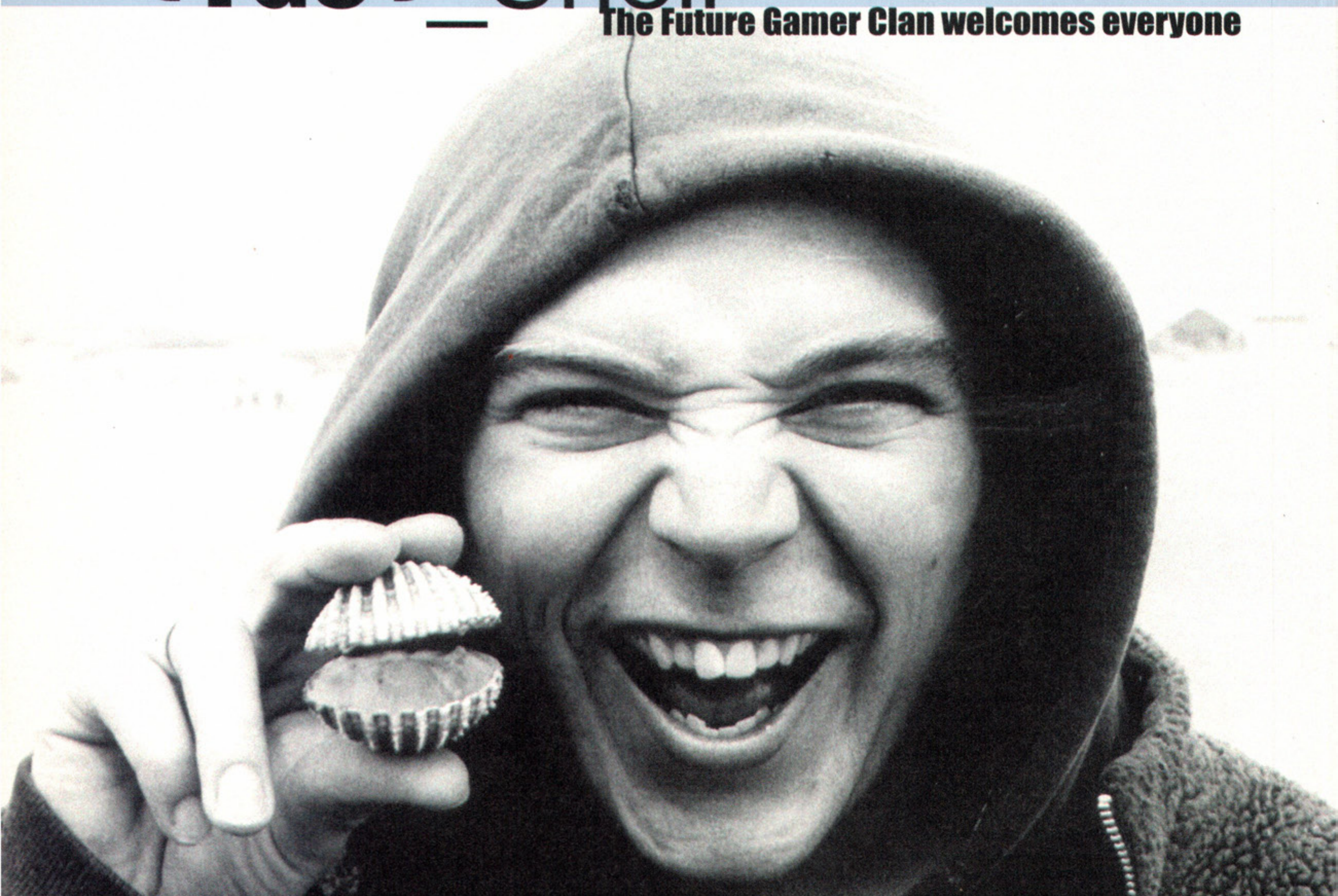
**BeOS was once mooted as an operating system technology for new Amigas. Quite right, too. BeOS is a modern, multimedia OS that owes a lot to AmigaOS. The problem that BeOS suffers from is lack of software development. However, things could change. Be have made a deal with Opera to port the latter's web browser to the platform. Another deal has been made with National Semiconductor for BeOS to be used in their Internet appliances. In addition, the outcome of the Microsoft antitrust trial could prove advantageous for Be's – Microsoft could be forced to allow OEM's to ship machines that dual-boot Windows and BeOS. However, we are interested in the PowerPC and the development of the PPC version of BeOS has been taking a back seat in favour of the x86 version. This is because the only current PPC hardware available to run BeOS is PowerMacs; but Apple are not at all cooperative. The appearance of a non-proprietary PPC machines might persuade Be to start things up again. BeOS is definitely one to watch.**




**BeOS has everything going for it, except for a dire lack of software. Its future could be exciting, though.**

# [ FGC ] _ Shell

**The Future Gamer Clan welcomes everyone**





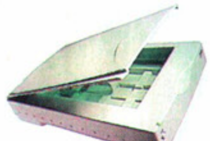

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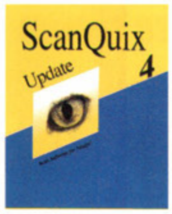
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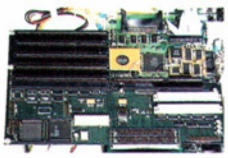
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# Screen Play

## SCREENPLAY INDEX

Hurrah! Lots of stuff being reviewed for this issue. To start with we've got a rather good, if rather old fashioned, beat-em-up in the form of *Fightin' Spirit* which has given me a blister from too much joystick waggling. Then there's a couple of puzzle games that made my brain hurt (it's not hard). Finally, there's *Extralife*, a CD crammed full of PD games, some old, some new, some awful, but most of them very good indeed.

It would be marvellous if we had four titles to review in every issue but plans for releases often go awry. However, the good news is that we've already got *Whale's Voyage 2* up for review in *AF134* and there's also a good possibility that *Putty Squad* will be in there too. Once again, it's time to cross those fingers and hope for more.

**Paul Cavanagh**



# Previews

**Two distinct flavours of adventure games are on their way and there's also new incentive to port or develop some classic titles**

## The Last Seal









These pictures look pretty good as they are, so just imagine them with all that lovely animation.

Software developers ANCOR are working on this new science fiction point and click adventure. The idea is that a form of pure evil had been tamed by ancient Egyptian gods and imprisoned in a burial chamber. The chamber was secured with five seals, four of which have been nicked by archaeologists over the years. Now the evil is escaping and the character in the game must locate the four seals.

The game includes action sequences where you'll have to make use of a gun, as well as more standard point and click style play. At some point in the game there will be an opportunity to control another character. Both roles should be well animated, the main one having 1200+ frames of animation, the second 500+. The backgrounds have been ray-traced and, as you can see from the screenshots, it's looking very nice indeed. To play *The Last Seal* you'll be needing an AGA machine with 2M Chip and 16M Fast RAM, a CD-ROM and hard drive. As yet there is no release date but you can keep up with the news at http://www.ancor.ch.




Sure, it all looks very Lucas Arts, but what's wrong with that?




## Source Code Releases

Following on from last issue's exclusive news of *Descent Freespace* being ported by Hyperion, the source code for *Descent II* has recently become freely available. The *Descent* series of games have a huge following, so it's quite likely that some resourceful soul will begin working on an Amiga version of the game. We're hoping to include the complete code on next issue's AFCD. In the meantime you could check out the *Descent 2* website at: http://descent2.com/ddn/sources/descent2/.

Also, David Braben has announced that he wants to set up an *Elite* Club, for connoisseurs of the classic space-trading game. He plans to release the code for *Elite*, *Frontier* and *Frontier 2*. He told Ben, "It's a lot of fun to release the code. It's not a profit thing at all." More information can be found at http://www.frontier.co.uk or at alt.fan.elite on newsgroups. On top of all that, the code for *Quake* may well be released by ID Software. Good news for games coders everywhere!

**Paul Cavanagh**



Let's hope that someone out there is prepared to put the work in for an Amiga version of Descent II.



Join David Braben's new club and get the source code for these classic games.

# Deep Silence
## The Secret of my Soul



(Right) A raytraced portrait of our main character.

Even the greatest adventure games sometimes lack innovation in their fighting systems or can only be played once because of the path you have to take but *Secret of my Soul* (SOMS) is a whole different kettle of fish.

Designed by Henning Knopp, it features a fantasy story which, unlike other games, is not fully revealed at the start. There are plenty of characters that are somehow involved in the plot, but all follow their own interests which may be good, evil or even somewhere in between; simply slaying all the monsters and trusting no-one won't get you far after the first levels! The plot offers some surprising changes and decisions concerning which side to follow have to be made at every turn so every adventure is a different one.

SOMS is due for release by ACP&TCP in the first quarter of this year but for more information you can email Amian@gmx.de .



At the moment, we've only got Low Res gameshots but even these look rather lovely.















This represents less than one per cent of the pixel animations used in the game.

### FEATURES:

- Most of the background graphics are raytraced and animated.
- Shadow effects. When an object enters a shadow, it becomes darker.
- Supports CyberGFX, and therefore all standard Graphics cards.
- With CyberGFX, you are even able to play on your Workbench.
- Eight-way scrolling at 30-50fps and full 256 colours.
- Minimum requirements are AGA, a 68020, 8M RAM and a 2x CD-ROM. On this configuration, the rendered sequences are a bit slow, but the main game still runs at 30fps.
- Full support of the CD32 joypad. If you don't have one, you can activate magic spells or the inventory with the keyboard.
- Stamina bar, you can switch to run-mode only for a certain amount of time.
- Power bar, you can build up power to increase caused damage.
- Because we've got two talented coders our intro will offer some elements normally only found in scene demos.
- There are 27 huge maps, where lots of adventures, riddles and enemies have to be solved/defeated.
- You can choose the story path. Some lead to doom, others to a happy end.
- *SOMS* features some cross over fantasy, like chasing demons in a 15-metre tall Battlewalker, or racing with a motorbike through Munich.
- The music is based on samples, which are played in real-time from your HD or CD during the game. That means you get 16 music channels without using CPU power-sucking AHI. We don't want any CD audio tracks that no one without a soundcard can hear.
- 20 different weapons...
- ...and 20 magic spells.
- Weapons can be upgraded so everyone can equip theirs the way they want.
- There are more than 10 additional characters (some are hidden), which travel, fight and talk to you in real-time.
- Each of the friends following you has its own intelligence. That means they've all got different talents and fighting skills and will use them to support you. This adds a strategic aspect to the game as some characters are made for certain missions, while ohers are just useless.

# Fightin' Spirit

## Feeling nasty? A tad psychotic? Then take it out on your Amiga – just remember to load this game first




Silly plot time. Suppose you're this mysterious criminal overlord, right, and you want to recruit new scumbags to the cause. Obviously they've got to be well hard, so what better way to go about things than to organise an illegal fighting tournament and challenge the winner to a scrap? Perfect. No matter that all the entrants are either CIA agents or hate your guts for various reasons – once they've beaten the hell out of you, they're bound to want to do your laundry for you. If this nonsense sounds familiar, you'll probably have played *Street Fighter II* (and the rest). *Fightin' Spirit*

**You'll want to practice your punching, kicking and throwing before you face your opponents and their own 'fighting spirits'**

shares more than the plot of the aforementioned classic, in fact it's almost an identical game, but with different characters and special moves. In terms of graphics and audio, it's got all the genre prerequisites – large chunky character graphics, colourful, sparsely animated backgrounds, Japanesey speech and tacky music.

Don't get me wrong, this is a great game, but for heaven's sake don't expect anything original, because you won't get it. This isn't necessarily a bad thing – the *Street Fighter* games were massively popular in their time, and playing this reminds me why. While 2D beat-em-ups have never really been my thing, I found it easy to get hooked on this game. The format of pummelling your opponent until he's unconscious or until the clock runs out is simple, but mastering the technique is more of a challenge and fun to learn.



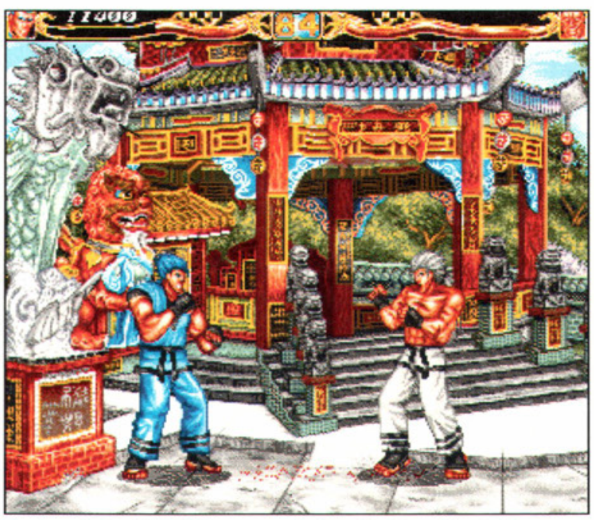

**(Right) Lorents gives Eric a bit of a scare with his puma party trick. Looks like the bloke with the camera has missed out though.**

### MEET THE BADDIES

There are ten characters that you control at the start of the game (I suspect that you may be able to get more with cheat modes), each with four special moves. If you're playing the one-player game, you'd be lucky to get through a single fight without using special moves. Activating these moves is achieved by a combination of joystick and firebutton presses such as left, right, left then fire. This takes a while to get used to, and the best thing to do is practice on a two-player game, with no one controlling the other player. The computer controlled opponents won't hesitate to



**Tong Lee's favourite special move involves sending fire speeding along the ground towards you. Jump!**



**Kento gets to fight Shiro – a mysterious fighter who challenges half-way through the tournament.**



**It's a fight out between the advertising giants. Who's going to win – Esso petrol or Kelloggs Frosties?**

## ANIMAL MAGIC

**Each character has a story to tell, all of them dead cheesy. It may not add depth, but it certainly adds humour to the game. Most of them have got a 'fighting spirit', an animal they can turn into for special moves.**



### Kento
The Japanese dragon-man is all out to avenge his master who was killed by the evil Jenshi.



### Burke
The squaddie with a scorpion fixation has been hired by some shady types to knock off the evil dude.



### Sheila
Her mates think she trains dolphins, but she's actually a CIA agent. Nicking Jenshi might ward off sexual discrimination.



### Lorents
Suave, American criminal with puma power who fancies a slice of Jenshi's stash.



### Rhajang
Jenshi's felonious feline friend who has actually got it in for his master.



### Tong Lee
The Thai bloke with a tiger spirit who was defeated by Jenshi in a martial arts competition is back.



### Yuri
He's into fighting with big sticks and guess who's nicked his favourite Bo staff?



### Eric
The biker dude who was engaged to Sheila and wants to protect her. The patronising git.



### Shuzar
A mysterious guru from India who doubtless has an axe to grind with you-know-who.



### Yadon
Godzilloid lizard mutation thing created by the bad guy as an experiment.

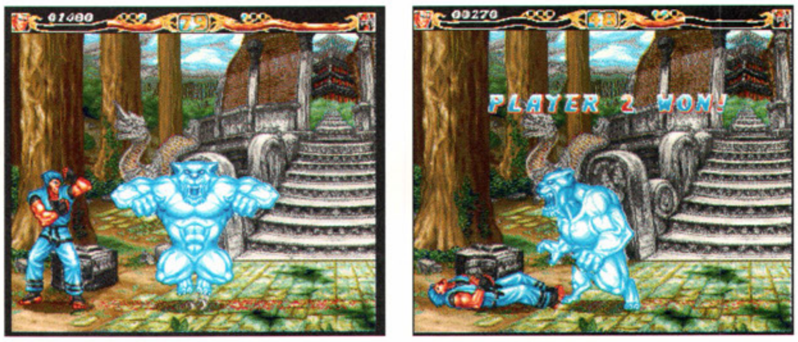


**Lorents' camp outfit is a dead give away – here you can plainly see that he's in training to be a male stripper.**

use their special moves on you, and they don't have to grapple with their joysticks. More standard moves such as punching, kicking, blocking, throwing and jumping are easily accessed using simple direction and fire button combinations. Fortunately there are four skill levels, which affect the speed of the opponents' reaction time, so you can start off hammering folks in easy mode. The characters themselves are fairly varied – Kento is a good all rounder whose special moves are possibly the easiest to learn, Sheila's agility is a real bonus, while Rhajang the tiger is slow but



**Sheila shows what she thinks of overprotective boyfriends by turning into a dolphin and giving Eric a slap.**




**That nasty Rhajang hardly gives poor old Kento a chance. He keeps doing this turning-blue-and-spinning-like-a-top thing that's very hard to defend against.**

immensely powerful. Their special moves all look unique, even though their effects are fairly similar.

## REVIEW YOUR OPTIONS

There's a lot of longevity in this game: ten characters' moves to learn, at least eleven fights for each character to win and at four different skill levels. Add to that multiplayer games (only two characters on screen at one time, but up to eight players in tournament mode, plus there's a kind of tag-team game). There are options galore too: blood or no blood; normal or turbo speed; alter the amount of continue options; joystick or CD³² controller and so on. What's more, a new version of the game has just become available which contains CD audio tracks.

Basically, if you're into beat-em-ups, you'll love this. If you're not, then this might just persuade you to like them.



**Burke's scorpion charge makes him look hard in front of all his hunky marine friends.**

**Paul Cavanagh**

**SUPPLIER: Alive Mediasoft**
**TEL. 01623 467579**
**PRICE: £14.99**
**REQUIREMENTS: CD-ROM, AGA or ECS**

## Pros and Cons

- \+ Plenty of replay value
- \+ Loads of options
- \+ Fast and fun
- \- Old fashioned and unoriginal

**OVERALL VERDICT:** A quality example of a classic genre game.

# 81%

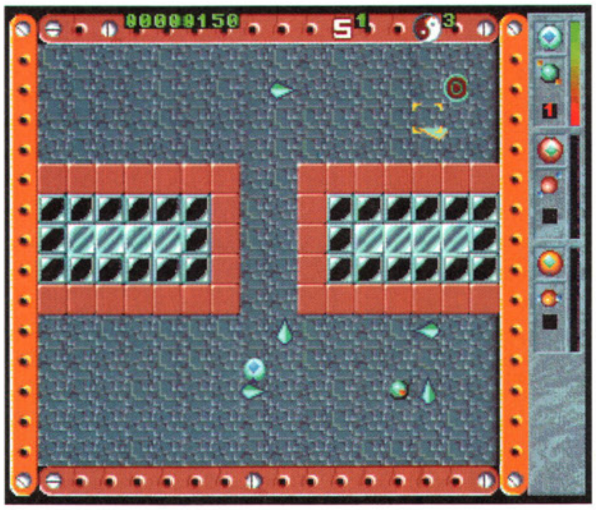
# Marblelous II

**Puzzle fanatics ahoy! We've got two brain teasers up for review this issue, starting with some shiny, spherical objects**

Marbles, as I recall from my distant youth, is a game in which the chief advantage is simplicity (not to mention the chance to win loads of pretty glass balls). *Marblelous II*, on the other hand, is really difficult and nasty, even if it looks very simple. Besides, it's a one player only game, so you can't win marbles or anything else from your friends.

The idea of *Marblelous II* is to guide a marble to an exit by giving it directions. It would be silly to tell a marble to take the second left after the railway station, so you use the mouse to put little arrows in the marble's path. Hold down the left mouse button, move the mouse in the direction you want the arrow to point and release. A left-click on its own will give you a no-entry sign. If you make a mistake you can right-click to undo an action. The no-entry signs will make your marble pause, but not for long. The marble has an energy bar, and once it's depleted the marble will no longer be able to wait at no-entry signs.

This is all fairly simple, and the first few levels aren't too difficult. But then you find you have to collect objects before you can get through the exit – no problem, makes life more interesting. Then there's a level where there are already arrows on the floor, and the marble will always follow these arrows, no matter what. Luckily there are gaps in these indelible arrows, so you have to work out which route to send your marble on. Fair enough, that's what puzzle games are all about, right? Besides, you can pause the game and sit and think for a while, so that's okay.



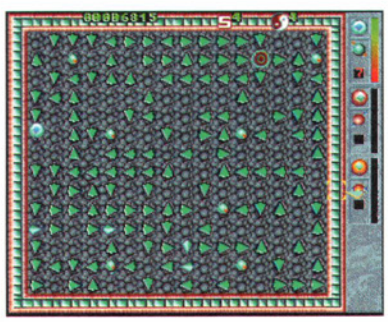
**This is the first level, the marble is moving downwards, so you can see that the route to the exit is all mapped out.**

**There's a nasty marble on level six that uses the teleports to reappear randomly on the screen and if it hits your marble you lose a life**

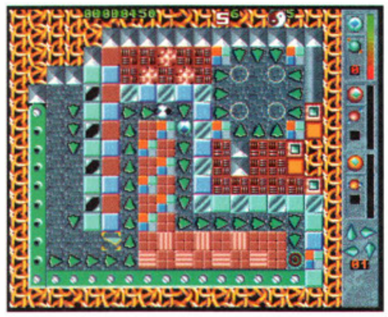


**The blue blocks here can be moved around. If you move them onto the little silver crosses they blow up.**

Then you get to level six. Oh, that horrid nasty little level six. The name of the level is 'All you need is luck'. That's because you have no way of actually controlling what happens in this level (as far as I can work out). There's an enemy marble moving about that won't respond to any directions you try to give it, and even if it did, you're limited to putting down just one arrow. The nasty marble goes into one of four teleports and re-appears randomly somewhere else on the screen. If it crashes into your marble, you've lost a life. This is horribly frustrating. Sometimes you can make it through the level the first time, sometimes you lose three or four lives through no fault of your own. No fair! Teleports in this game are like that, it's impossible to work out where your ball (or the nasty one) is going to end up. Given the fact that you only get a password on the completion of every fifth level, you might imagine how frustrating this gets.



**Lots of little indelible arrows. It looks a lot harder than it really is, all you need to do is plan your route carefully.**



**Level six, the ghastly level. The teleports are the rings, top right, and that's where the enemy ball is when you start the level.**

However, if you like a challenge you will like this game. Sometimes you can have three marbles to control at the same time, and you have to be very fast. Sometimes you simply have to plan ahead, and sometimes, as I've discussed, you have to be plain lucky. Some of the icons that you can pick up are quite interesting – there's one that gives your marble armour so you can blow up mines as well as speed-ups and extra lives. There are over a hundred levels, so you'll have to be a determined player to get to the end of this game.

**Paul Cavanagh**

**SUPPLIER: Alive Mediasoft**
**TEL. 01623 467579**
**PRICE: £7.99**
**REQUIREMENTS: A floppy drive**

## Pros and Cons

- + Addictive and challenging
- + Over 100 levels
- − Just too difficult sometimes
- − Average graphics and sound

**OVERALL VERDICT:**
**A great game for those of you who like a real challenge.**

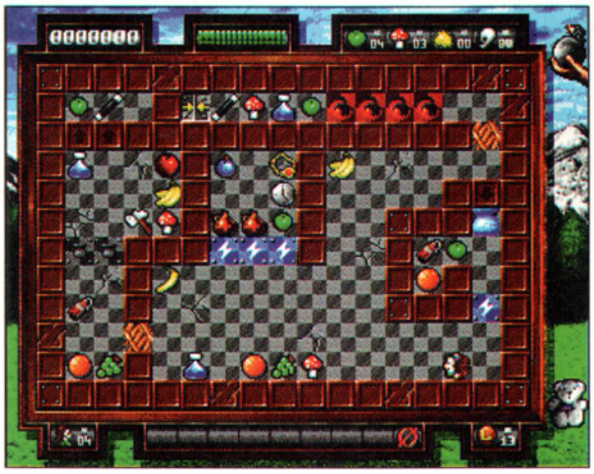
**65%**

# Blockhead 2

## Take exploding teddy bears, evil eyes, dangerous mushrooms and mix them up in a big pot and you've got another brain-exercising puzzle game

The sequel to *Blockhead* (reviewed in *AF97*, with a rating of 77 per cent) has done away with the concept of putting blocks into the appropriately coloured exit. Instead, your little chappy, Bertie, is required to gather ingredients to put in his magic pot. Calling the game Pot Head might have caused unnecessary hassle, so we've got *Blockhead 2*, and it's turned out to be a very appealing little game.

The basic idea is presented in a brief tutorial, where you learn that you can push and pull your cauldron by walking up to it, holding down the fire button to grab it and then moving Bertie about. You can pick up your ingredients and put them in the pot, or move the pot over the ingredients. When you've collected the required ingredients you push the cauldron into the exit. Nice and simple. As usual with this type of game, everything is against the clock, which is represented by a hand lowering a bomb onto Billy the Bear. If Billy Bear blows, Bertie's bamboozled.



**This is the sort of level that really gets you thinking. How, for example, do you get past those nasty blue man traps?**

**Before long you'll be finding axes to break down doors, dynamite to blow things up with, magic teleporting potions and so on**

As with the original, *Blockhead 2* is well paced and each level introduces a new game element. Before long you'll be finding axes to break down doors, dynamite to blow things up with, magic teleporting potions and so on. Those are the useful things, the further you get in the game, the more obstacles and traps are presented. There are tiles with red eyes on them that deplete Bertie's energy, tiles that you can't drag the pot over, and traps that kill Bertie instantly if he steps on them.

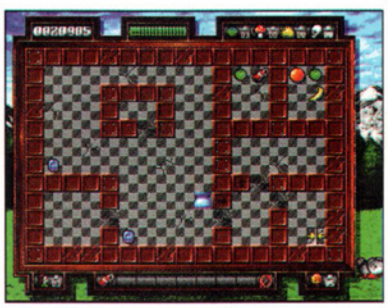
At the beginning of the game you only need to put harmless green berries in the pot, but later on you get mushrooms that deplete energy while you hold them. Time depleting magic dust and deadly skulls are later ingredients. As you can imagine, a combination of all of these elements can make for a level that you really have to think about to complete. To make things worse, if you pause the game you're presented with a blank screen, so you can't ponder your moves with the clock stopped. Thankfully, there's a code for each level, so you don't have to keep going back to the start. While the graphics are nothing special, they're colourful, clear and cute, and the music is cutesy but ultimately irritating.



**Each level starts with a briefing, explaining any new features and giving you the password.**



**Those little red eyes drain Bertie's energy every time he stands on them so you have to plan your route carefully.**



**Sadly, Billy the Bear gets blown up. The guilt is overwhelming – if only I'd been just that bit quicker!**



**This is the world map according to Blockhead 2. It shows Bertie's progress in the magic kingdom.**

What all this adds up to is a game that keeps you on your toes, at the same time as exercising the brain. Like all good puzzle games, if you get stuck on a level you can spend ages trying out different ideas and not getting anywhere, when all of a sudden a seemingly obvious solution presents itself. The fact that each new level contains a new tool or obstacle makes it easy to get that 'just one more level' syndrome and before you know it, you're hooked.

**Paul Cavanagh**

**DEVELOPER: Applaud Software – available from various dealers**
**PRICE: £7.99**
**REQUIREMENTS: Any Amiga with 1.5M chip RAM**

### Pros and Cons

- + Good learning curve
- + Addictive and fun
- + Cute and colourful
- – A little old fashioned

**OVERALL VERDICT:**
**A puzzle game from the old school that keeps getting better the more you play.**

# 80%

# Extralife

## Fancy a game of Galaxians? Pacman? Can't be bothered to go through all those AFCDs? Get this

Public Domain software is great. Spot on. It's fantastic that there are coders willing to pass on their skills to the world for next to nothing. What's more, the quality and quantity of PD software out there for the Amiga is breathtaking. Games-wise there's so much that it can be hard to know where to start. You could go through all the *Amiga Format* CDs and floppies that you've probably amassed over the years, or you could download loads of stuff from the Internet and start sifting the good from the bad. Or you could buy this CD from Epic Marketing.

**The classic drawer includes some of my all time favourites although most of the games are well presented and amazingly good fun**

I haven't had time to play all of the games on the CD. That's no bad thing, actually, because the main reason is that I've been too busy playing just a few of the games. The compilers of this collection have been careful to include some of the very best games around. Having said that, there are some truly awful titles here, some of which are so bad they're good, while others are just plain bad. These do seem to be the exception though. Most of the games are simple, old-fashioned, well presented and amazingly good fun. The games are stored in eight themed drawers, so we'll have a quick peek at them and pick out one or two of the best games from each.

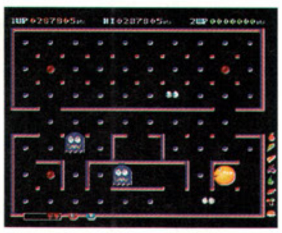
In alphabetical order they are: Adventure, Arcade, Classic, Platform, Puzzle, Racing, Shoot-em-up and Workbench. Adventure has 16 games, mostly point and click adventures such as the excellent *Legend of the Elves* and *Lethal Formula*. Also resource management games like *Breed 96*. Arcade has 30 games, the best of which is probably *Blitz Bombers*, which is fantastic in multiplayer mode. There's also a decent pool game and an Amiga version of the classic fighting game *Way of the Exploding Fist*. Classic has 36 games including some of my all time favourites. *Deluxe Galaga* and *Deluxe Pacman* border on the sublime – simple, fast, addictive fun with some really neat pickups thrown in for good measure. Also in this drawer is *Q-Bic*, *Zaxxon*, *Defender* and *Jouster*. Platform contains 32 games including the childish but charming *Wibble World* and the excellent *WiZiO* and its sequel *WiZ2*. Puzzle's got 36 games. Many of these are variations of *Tetris*, the best of which is *Super Foul Egg*. There are other types of game here such as *Quiz Master*, an effective pub quiz machine simulator. Racing fans may feel shortchanged with only six titles, although *Knockout 2* is another multi-player hit and includes a vehicle editor. Shoot-em-up has 36 games including one called *Gravity Force II* which looks like an early version of the recently reviewed *Phoenix Fighters* – not as good, but still very playable; and Workbench has16 games you can play in a Workbench window. These include *Mini Arcanoid*, and versions of *Hangman* and *Monopoly*.

I make that 208 games in total. It's worth noting that the games have all been fixed to work on '040 and '060 machines, although not all of them run straight away from the CD – some require extra memory, some won't work with extra memory and so on. Also, if you want to save games or highscores, you'll have to install that game on your hard drive. If you get a problem you can usually sort it out by looking at the relevant readme file, but not always. Even so, there's a hell of a lot of games here for little outlay and many of them are very good indeed. Even if you've got them elsewhere, it's worth having a CD just for convenience.

**Paul Cavanagh**



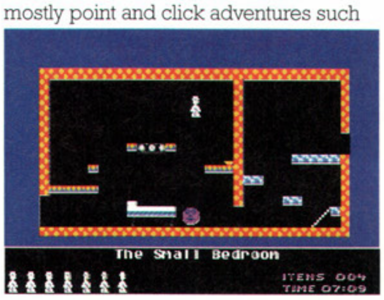
Argus is an AMOS coded shoot-em-up, and you thought it was a catalogue shop.



Deluxe Pacman is more fun than many commercial releases.



Monkey Island style adventuring in Lord of Alcandria.



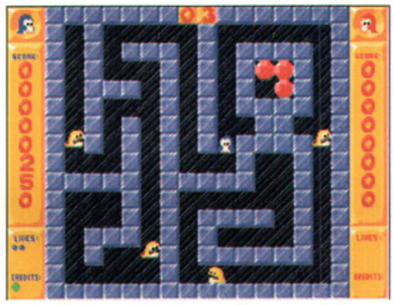

Oh yes! It's the welcome return of Miner Willy and his waggly little legs.




There's chaotic multiplayer fun to be had in the superb Blitz Bombers.




Madhouse is simple and rather peculiar.



Pengo does his block-pushing thing.



Super Foul Egg – silly name, great game.

**SUPPLIER:** Epic Marketing
**TEL.** 08700 110013
**PRICE:** £14.99
**REQUIREMENTS:** Any Amiga with a CD-ROM

### Pros and Cons

- − A few games that don't work easily
- + Loads of very playable games
- + Saves you hunting around for the right disk
- + Much cheaper than downloading games

**OVERALL VERDICT:** Great value for money, with some games that you'll keep coming back to.

**82%**

# GAMEBUSTERS!

**Doesn't time fly? With only one section of our Wasted Dreams solution to go, why not send in suggestions as to what you'd like to see in these pages next?**

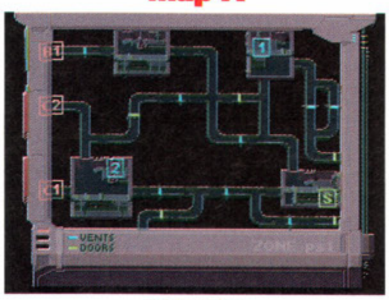
## Wasted Dreams PART 3 Complete Walkthrough

Wading about in sewers isn't everybody's idea of fun, so let's get out of there. The sewer system is divided into three zones (which we'll call A, B, and C), hence there are three maps that you need to refer to.

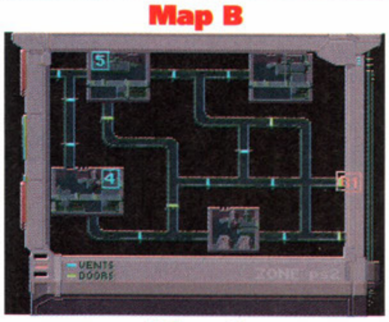
From the start position go up to position 1 and use the switch. Return the way you came and go left to 2 and use the switch. Go left and enter zone C using the entrance at C1. Go left, down, left, up and left until you get to point 3. Use the switch. Return to 1 the same way you came and use the switch again. Go down, and take the second turning on the left, then go all the way up and left and enter zone B through B1. Go down then left and pull the plug at position 4. Go up to use the switch at 5 then return to zone A the way you came. From B1 go right, down, left and go to C2 to enter zone C. Go left then down and use the switch at 6. Go up, left, up to 7. There are two machines here, you should use the one on the left. Go back to 6 and then go left to 8 and use the switch there.

Return to 7 and press the same button again. Go down, left, second left, down and left to 9 and pull the switch. Leave the room and go up to the room marked E and use the screwdriver on the hatch.

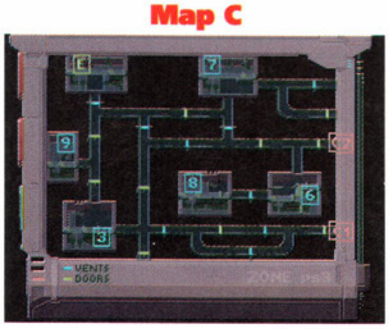
**Map A**

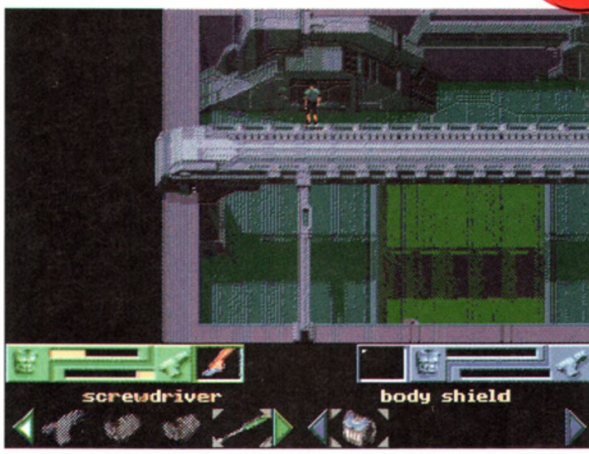



**Map B**




**Map C**



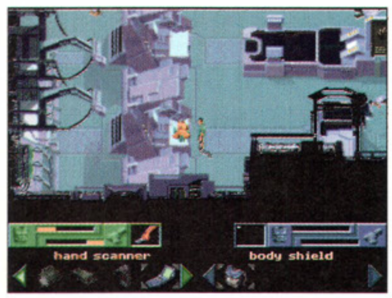

**Hurrah! This is where you finally esccape the rather nasty sewers.**




**(Right) You'll be needing the ID card in this locker.**




**Here's where you take a shower.**




**What are they doing to the poor aliens?**




**Get the serum to help the aliens here.**

> **The sewer system is divided into three zones, which we'll call A,B and C, hence there are three maps that you're going to have to refer to**

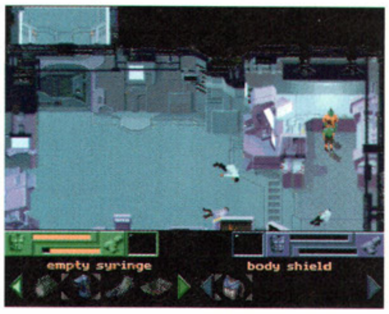
**(Below) Where ingenuity fails try some brute force and a crowbar on these doors.**

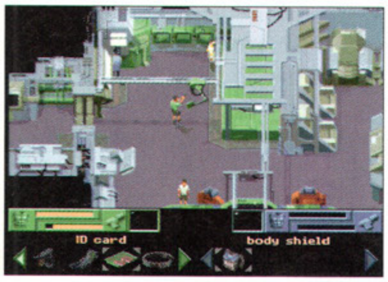






**Kill this poor chap for his locker card.**



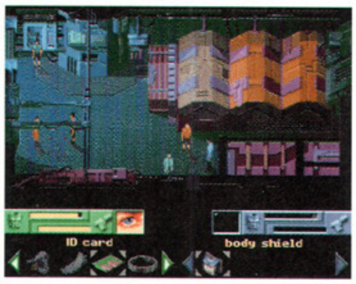

**Watch out! They've got hand-grenades now. Stick close to that door.**

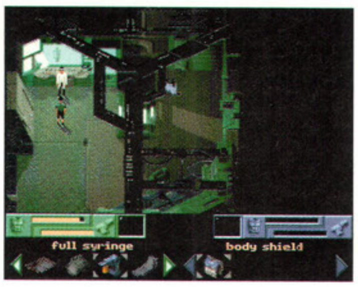
You can now finally leave the sewers.

Pick up the crowbar, leave the room and go right. Use the console and then the teleport. Go down and use the crowbar on the big doors. Now you can enter the research centre. Go left and down until you find a guy who is standing still and looks like he's playing with a Gameboy. Shoot him and pick up his locker card. Go right and then down into the main building. Check the terminal on the right before going down and opening the locker to get the lamp and ID card. There's more ammo to the right of the locker. Go left and use the cleaner on the top wall to have a futuristic shower. Go back to building where you mugged the guy and enter with the ID card. If you can't enter, you'll have to have another shower.

When you get into the building you will be attacked, and will have to get rid of everybody. Pick up the door card that one of the men has dropped and look around to find the hand scanner and empty syringe. Use the hand scanner on the aliens lying on the benches. Use the terminals to find out more about what's going on. Don't miss the terminal to the right of the alien that is in a standing position. Go left into another room. Use the door card on the door at the bottom of the room. You'll be attacked again. When you've dispatched the scientist, use his desk, and fill your syringe from the tray on the right. Take the his ID card and return to the aliens. Use the serum on an alien. Refill the syringe and use it on the remaining alien. He'll give you a bracelet before disappearing.

**(Below) These chaps are having a sneaky fag break. (Bottom) This chap needs more than gentle persuasion to tell the truth.**




Go to the room to the left and use the console on the top wall. Go down and use the lamp on the hole in the floor. Now fill your syringe using the tray on the left. Leave the building and then enter the building on the far right using the ID card; use the card again on the panel just inside the door and go right. You need to get into a very difficult battle in this room, stick close to the door in case you have to run off to the recharge unit. When everybody's dead, use the console and then go through the door, bottom right. Get the cable from the locker. There's also some ammo in this room if you need it. Leave and go to up to another door. Use the cable on the door, and then the shrapnel on the cable. Go through the door and attack the guy in the blue coat. Talk to the scientist and use the syringe on him. Open the locker and get the control box. As you leave the scientist will attack you, shoot him and then take his priority card. You should now have two priority cards – find out where to use them next issue.

**Paul Cavanagh**

# Simon the sorcerer

D Green from Huntingdon is still stuck on how to become a wizard. He's got the staff and now needs money. Okay, get the scissors from Calypso's house and use them on the dwarf in the pub to get a beard. You need to get some wax from the beehive (you need to use the repulsor on the door of the chocolate house so that you can get the smokebox and hat). Ask the barman to make you a drink and use the wax on the beer barrel while he's not looking. Receive a beer voucher then leave the pub and pick up the barrel. Go to the dwarf mine and look at the rock outside to reveal the password. Wear the beard, enter the mine, go left and give the guard the beer barrel. Leave the mine, find the wise owl, pick up the feather he drops, return to the mine and use the feather to tickle the now sleeping guard. Pick up the key he reveals and use it to enter the treasure room. Give the occupant the beer voucher and he'll give you a gem. You can now sell the gem to the dodgy geezer for twenty gold coins, which will suffice for your membership to the wizard's guild.

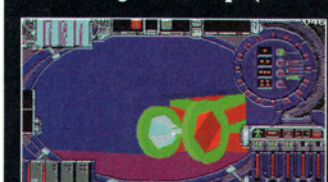
As for your other questions: you need a tube of mints to get past the snowman; and the cold remedy in the druid's house will help you with the dragon.



**I'd never get away with nicking beer, let alone beards.**

# Cybercon III

**Mark Rodgers from Northampton is threatening severe self-harm if he can't make progress in this game, and we can't have that can we? He's got all of the green key-codes but can't find the blue codes. That's because the blue sonic key is composed of the four special device components. You must collect all four, go to the Spares and Repairs room, and drop the components into a booth. They will transform into the blue sonic key. I'm not sure if this will be enough information for you Roger, so a complete walkthrough with maps (thanks to Bill Bennet, via Aminet) has been included on the CD just for you. So please don't go doing anything silly, okay?**



**The dawn of 3D gaming? Maybe.**

# SEND US YOUR TIPS & QUERIES!




**Have you got hints, cheats, tips or general good advice for any Amiga games? We'd especially like some for the newer ones on the market. Or, if you've got a query about a game, give us a brief explanation of it, where you're stuck, then drop us a line and we might be able to answer it in Helping Hands. Please don't send us SAEs though as we'll just steal the stamps.**

**Name of Game(s):** ........................................

**Point where I'm stuck:** ........................................

........................................

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........................................

**Send all tips and questions to:**

**HELPING HANDS • Amiga Format • 30 Monmouth Street • Bath • BA1 2BW**



# PD Select

Just when you're feeling lazy, along comes another fine mélange of freeware that will empty your bin and check your mail for you

## BenchTrash 1.50

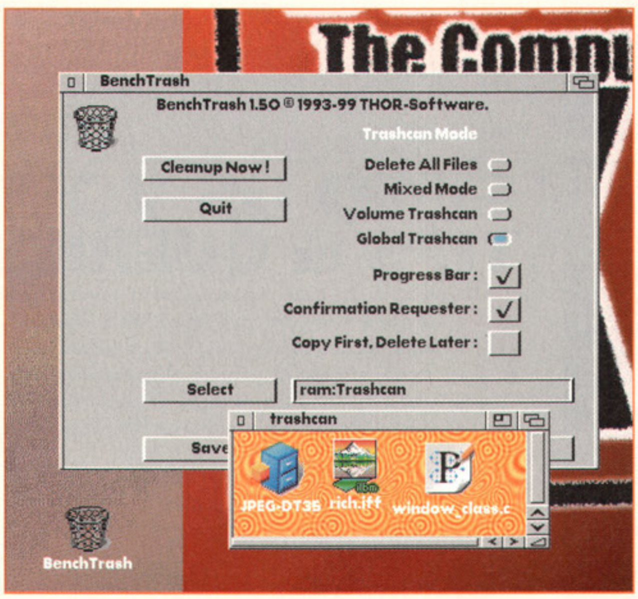
Does anybody use the Amiga's standard trashcan system for deleting files? I certainly don't know anyone (cue a flood of reader's letters to the contrary). It is a much more useful option to have the trashcan always visible on the desktop rather than tucked away in the root drawers of each of your disks. There are a host of commodities for the Amiga which will provide such a global waste basket facility, but this latest version of *BenchTrash* is one of the more notable due to its support of OS3.5 features.

*BenchTrash* puts a trashcan AppIcon on your desktop which you can drop unwanted files on to. What happens to these dropped files depends on the mode of operation you have chosen for *BenchTrash*. In Delete mode files dropped into the garbage get deleted immediately. Alternatives are to have files moved to a trashcan drawer local to the file's volume (as the standard behaviour) or have files copied to a single global trashcan and the originals deleted. I prefer the first option, as when I choose to bin a file I want it gone for good. This also frees up the disk space immediately. In comparison, the global mode is a lot slower, since the files have to be copied, and there must be enough room on the disk for the additional copies to be made.

Another ability of *BenchTrash* is that if you drop a disk on the trashcan, it will eject the disk (providing the drive itself supports ejecting media). This is the ultimate in laziness and should appeal to MacOS users.

None of these features are particularly remarkable, though. What makes *BenchTrash* stand out is that it can make use of OS3.5's new desktop functions. For one, the AppIcon can be snapshot directly. That is, you can drag the trashcan to wherever you want it to live on screen and select Snapshot from the Icon menu to make it reside there permanently. If *BenchTrash* is in global mode, opening it (by double-clicking or select Open from the menu) will pop up a Workbench window showing the contents of your trashcan drawer.

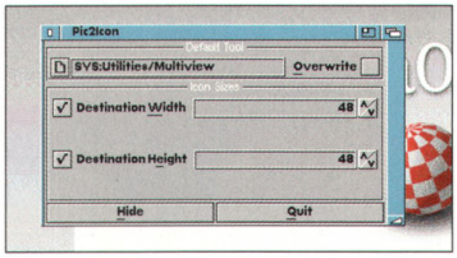
*BenchTrash* generally works very well and it is heartening to see software beginning to take advantage of OS3.5. My only real concern is that the program's error recovery could be better. For instance, if you delete a file which is protected from deletion, an error requester will pop up and tell you. This is as it should be, but why not give the user the choice of performing the deletion anyway? Also, if *BenchTrash* is not in Delete mode and one of the files in the trash is protected then the file will remain there after emptying the trash – you don't even get an error report. A bit of tidying up is needed here.




With BenchTrash you get to choose when your rubbish gets taken away and it isn't affected by Bank Holidays.

**BY:** Thomas Richter
**WARE:** Freeware
**FROM AMINET:** util/wb/BenchTrash.lha
**SIZE:** 190K

## Pic2Icon 1.0




**Turn your desktop into a picture gallery with Pic2Icon.**

Take a look in the Gallery drawer of our CDs and you will see that each of the pictures has a scaled-down version of the picture as its icon. Typically an image processing package is required to do this sort of thing, but *Pic2Icon* is a simple tool which will do the job for you automatically. It converts pictures to OS3.5-style Color Icons.

*Pic2Icon* can be started from either the Workbench or the shell. If run from WB, it puts an AppIcon on your desktop. Drop any datatype-supported picture file on this, and *Pic2Icon* will automatically create a (scaled) thumbnail icon for it. If the picture already has an icon, only its image will be overwritten; its Default Tool and Tool Types will remain unchanged.

There are a couple of limitations with *Pic2Icon*, however. For one, there is no way to specify or create a highlighted image for icons. An icon's selected image is just a darkened version of the normal image. For another, you get poor control over the size of icons it creates. You can pop-up an options window by double-clicking on the AppIcon itself. This merely allows you to set the exact pixel size of destination icons. It would have been more useful to be able select a scale factor and to have an option to preserve aspect ratio. You also have no option to reduce the colour depth of an image before making the icon and currently the program is limited to working with images of up to 256 colours.

Nevertheless, with some work *Pic2Icon* could prove to be incredibly useful, especially for the batch processing of icons.

**BY:** Sebastian Bauer
**WARE:** Freeware
**FROM AMINET:** gfx/conv/pic2icon.lha
**SIZE:** 7K
**REQUIRES:** OS3.5

## PIO Icon 5.12

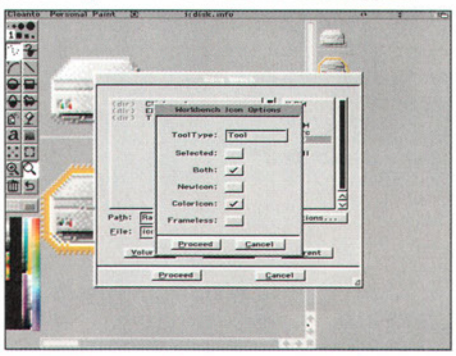
The new icon editor supplied with OS3.5 is a vast improvement over previous versions; but its drawing tools and limited palette control are not as comfortable to use as those provided by the average paint package such as *PPaint*. Okay, you can easily import images prepared externally into *IconEdit*, but wouldn't it be easier if you could load and save OS3.5 icons directly with *PPaint*? *PIO Icon* is a plug-in for *PPaint* which will do just that.

*PIO Icon* is a replacement library for *PPaint* which enables you to transparently read and write icons as if they were plain images. It supports standard planar (old style) icons, NewIcon icons and OS3.5 Color Icons. Selecting an icon to load is a bit hit-and-miss, since the *PPaint* file requester hides ".info" files, but if you select 'Icon' as the image format and choose a file, its icon will be opened; for drawers and volume icons you have to manually specify the icon name with the suffix.

The Save Options requester, when writing icons, now allows you to specify whether the image is stored in NewIcon, Color Icon or old icon format. For OS3.5, you may select whether the icon is borderless or not. The icon's Tool Types remain unaltered on saving, so if the icon already contains a NewIcon image (encoded in the Tool Types) it will not be overwritten. You can also choose to whether to load or save an icon's normal or highlighted image – or both at once. In the last case, the normal and selected images are separated by a line of one pixel width in pen number one.

In practice, loading and saving icons as brushes works well. Unfortunately, working with brushes only permits a limited amount of image processing – although it does allow easy manipulation of the icon's palette, such as depth changing or remapping. For example, it's a simple matter to convert a Color Icon into a standard four colour planar icon: grab Workbench's palette, change the image depth to four colours, import the desired icon as a brush, remap it and then save the brush as an old-style icon. Actually editing or drawing icons by hand is more tricky, since you have to be precise about the size of brush you pick up from the screen and save out.

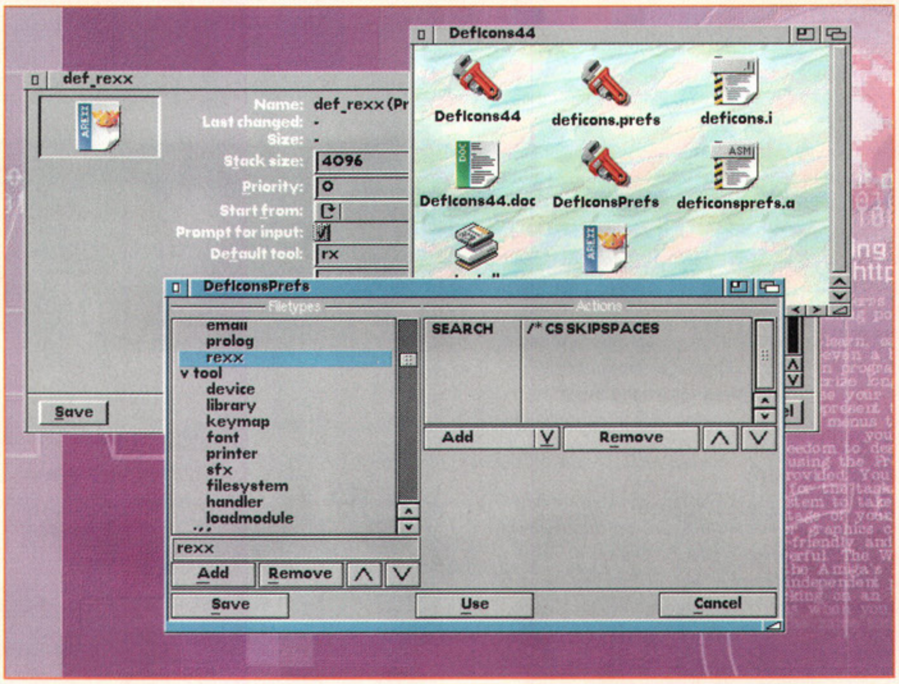
The *PIO Icon* package complements *IconEdit*, rather than replacing it. It can simplify tasks, but *IconEdit* still allows more control over the final icon format. *PIO Icon* is perhaps most useful for batch processing via *PPaint*'s extensive ARexx support.




**Put PPaint to good use to create OS3.5 icons.**

**BY:** Elnar Plischke
**WARE:** Freeware
**FROM AMINET:** biz/cloan/pio_icon.lha
**SIZE:** 15K
**REQUIRES:** PPaint 6.3+ (and OS3.5 for Color Icon support)

## DefIcons 44.2




**The new DefIcons package has a preference editor so you can create your own filetypes.**

**You may remember me talking about *DefIcons* before. It is a system for giving fake icons to files according to their filetype. The original tool came as part of the NewIcons package and its functionality was the result of an OS-illegal patch. This new version is perfectly legal and takes advantage of a call-back hook in Workbench 3.5 designed specifically for just such a purpose.**

**The new feature of this latest release is a preferences editor for you to configure your own filetypes. These are stored in a 'brainfile' which is stored in object code format. Previously, the only way to customise the settings was to edit the source code and assemble the brainfile yourself. Not a particularly friendly method.**

**Filetypes are grouped into classes: text, picture, sound, movie, etc. Classes are further divided into filetypes. So, for example, GIF and JPEG are children of the picture class. Files are matched to a type by a combination of examining a file's internal structure and/or its filename suffix. The editor provides a tree-list on the left-hand side of the window to show the hierarchy of filetypes. The right-hand side selects the options used to identify the selected type. Double-clicking a type pops up the standard Icon Information window, where you modify the icon corresponding to that type.**

***DefIcons 44.2* is a big improvement over previous releases. The editor is useful, but not particularly pretty. Until Reaction gets a more powerful listview class, there's not much anybody can do about it, though. Unless you know what you are doing, it is also rather complex.**

**BY:** Stephan Rupprecht
**WARE:** Freeware
**FROM AMINET:** util/wb/DefIcons44.lha
**SIZE:** 31K
**REQUIRES:** OS3.5

## POP3Stat

This is a tool which can handily query any number of POP3 email accounts to check whether they have any new mail. The rationale is that when you need to quickly check for the presence of mail, you don't want to have to be bothered with loading a, possibly resource-hungry, email client.

*POP3Stat* may be run from the shell only and can either be used in a script (it can be set to return a particular status code to signify the existence of mail) or it can launch the email client of your choosing. These options are specified as arguments to the program.

The email accounts themselves are configured by creating an ASCII text file listing the mail server, ID and password of each account you wish it know about. Creating settings files by hand may seem hard work for most Amiga users used to point-and-click GUIs, but just console yourself with the fact that *POP3Stat* is a lot simpler than, for instance, *Fetchmail*.

*POP3Stat* is a program that it is hard to fault. It performs a simple task and does so with the minimum of fuss. Whether you actually have need of its services is another question.



**Why wait for that email client to load?**

**BY:** Hynek Schlawak
**WARE:** Freeware
**FROM AMINET:** comm/mail/POP3Stat.lha
**SIZE:** 8K
**REQUIRES:** ixemul.library, ixnet.library

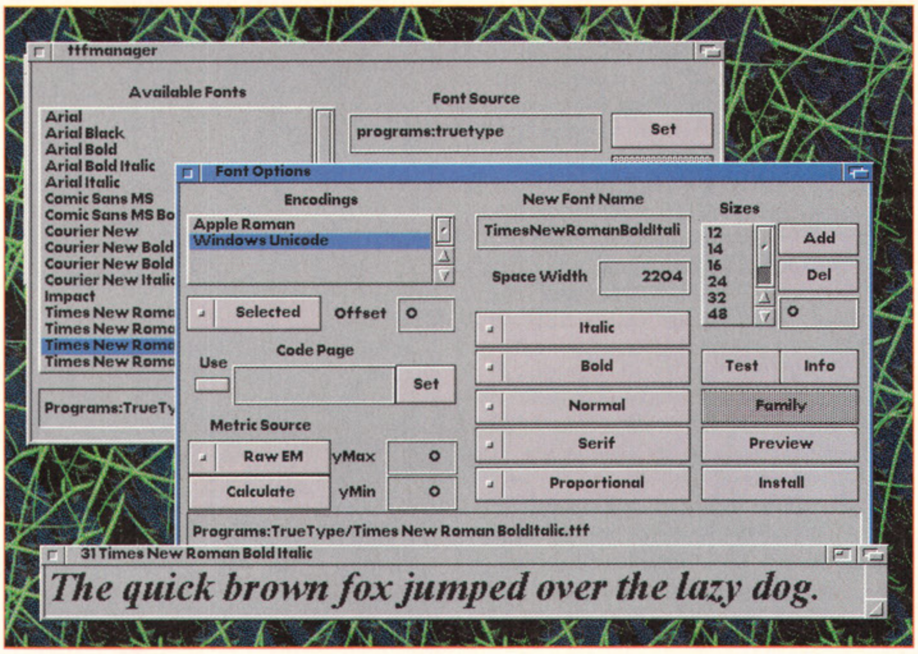
**Continued overleaf ➡**

# TTF Library v0.8.2

One of the lesser-known facts about the Amiga's font handling abilities is that it supports plug-ins to cope with other font formats. AmigaOS2.0 and above ship with the bullet.library which can rasterize and manipulate Agfa (Compugraphic) fonts, but, with the exception of PCL printers, this format is not generally used these days. TrueType is the font technology in vogue and with a third-party font engine, such as *TTF Library*, you can actually use these on the Amiga. (For the full font saga, see The Right Type, *AF127*)

The *TTF Library* package comprises of the font engine itself, TTFManager for installing TrueType fonts (it works something like the standard Intellifont tool for Agfa fonts) and some miscellaneous utilities for viewing, rasterizing and caching fonts, etc.

The TTFManager creates the requisite font header files in your FONTS: drawer for whichever typefaces you wish to use. The outline descriptions themselves can live somewhere else on your system – which means you can share them with any applications that have custom support of TrueType, such as *Wordworth*. At its simplest, all you have to do is select the typefaces you want and hit install. TTFManager also provides a wide selection of options to configure each font. For instance, if you are using a machine with a non-Latin character set, you can select a code page table to ensure characters get mapped to the appropriate glyphs. A confusing feature is the option called Metric Source. The point size of a system font on the Amiga refers to its height in pixels, not its actual point size. The Metric Source option selects how a particular TrueType font's size is mapped onto this pixel size.




Don't be left behind typographically. Install TTF Library on your system now.

TrueType technology is notably superior to the Agfa technology built in to AmigaOS. By installing this TrueType engine, you get access to a wider range of better quality fonts which are rendered more quickly and look better at screen resolutions. *TTF Library* is still work in progress, but I am impressed. Omissions at the mount include the inability to apply software styles (algorithmic emboldening, italicizing, etc.), but since TrueType typefaces are generally supplied in families covering roman and italic faces and a variety different weights, this is no hardship.

There seems to be some doubt at the moment whether the FreeType project which *TTF* is based upon infringes patents owned by Apple. My advice is to get a copy *TTF Library* now and install it before it's too late.

**BY:** Richard Griffith
**WARE:** Freeware
**AVAILABLE FROM:**
http://home.sprynet.com/~ragriffi/ttflib.htm
**SIZE:** 244K

# JPEG-DT35 46.0

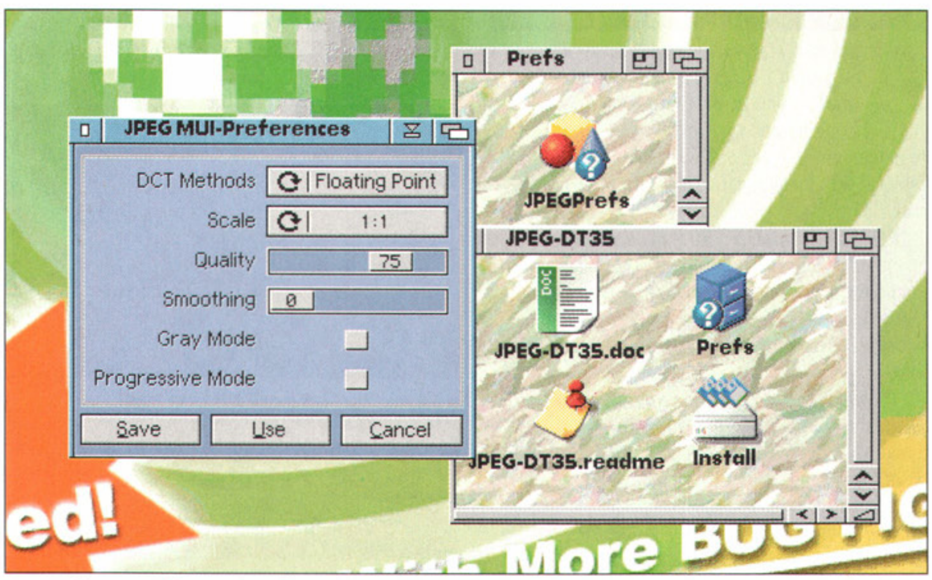
One area that was improved with the release of OS3.5 was the datatypes handling. A datatype for JPEG images is supplied by default. You might wonder, then, why somebody would bother to write another one. Well, Achim's JPEG datatype has a couple of advantages over the standard one.

It is smaller (it makes use of Paul Huxley's jpeg.library for decoding and encoding), faster, supports writing (for the few applications that can do datatype writing) and is supplied with a preference editor. The editor is realised with MUI and allows you to choose which codec to use for both encoding and decoding and, for writing permits, the choice of a scaling factor, compression quality, grey-scale mode and whether to save as a progressive image.

This JPEG datatype is notably faster than the standard one. For instance, I timed the standard one and the various modes offered by this one at decoding and displaying Ogy's winning Gallery entry from last issue with Multiview. The fastest was JPEG-DT35 when using the FPU codec, achieving results almost twice as fast as the standard datatype. Strangely, the docs for this package say that the FPU method should be the slowest of the methods it offers. See the table for results.

This is a faultless datatype implementation. It cannot overcome the limitations inherent in the datatype systems itself. Of course, what we really need is an equivalent mechanism that can handle streams of data not just files.

**Richard Drummond**




New and improved image decoding with JPEG-DT35. It could do with a snappier brand name, though.

## DECODING SPEEDS

| DATATYPE | MODE | TIME |
|---|---|---|
| OS3.5 | N/A | 19.52 |
| JPEG-DT35 | Slow integer | 14.00 |
| JPEG-DT35 | Fast integer | 13.06 |
| JPEG-DT35 | FPU | 11.96 |

**BY:** Achim Stegemann
**WARE:** Freeware
**FROM AMINET:** util/dtype/JPEG-DT35.lha
**SIZE:** 207K
**REQUIRES:** OS3.5 (MUI for the prefs editor)

Serious

# Tornado 3D

Italy brought us the renaissance, Leonardo Da Vinci's helicopter, Michelangelo Buonarroti's David and now Eyelight's own weather system

Must keep it very short this issue. We've just got far too many products to fit in. No time to waste talking about them either. Far too busy reviewing them all. Still, the surprise is that next issue we may again have a problem fitting everything in, since rumours have it that, yes, it's true, BoXeR may put in an appearance over the coming month or so.

Now, I know we've said it before, and I know that we've said "I know we've said it before", but perhaps, this time, the super Amiga is finally upon us?

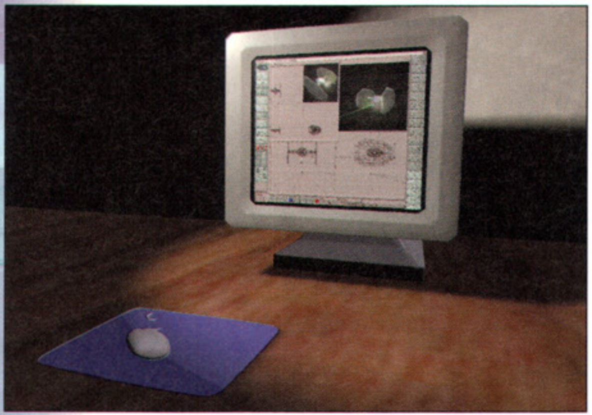
Certainly with the promise of that, Blittersoft look to be in for a busy time soon, as will we if we hope to fit everything into the issue and not run out of...

Ben Vost

SERIOUS INDEX



For all Italy's admitted brilliance, they did also bring us the Fiat Strada, Catholic intolerance and René and Renata's awful wailing, but *Tornado 3D* really is in neither category. Oh, it would be in the same realms as a software equivalent of the frieze on the Sistine chapel ceiling (at least for the Amiga) if the bloody thing actually worked, but it's very hard to give it a top score when there are so many problems with it.



One of the example scenes shows off Tornado's excellent soft shadowing.

## CONTENDER FOR KING?

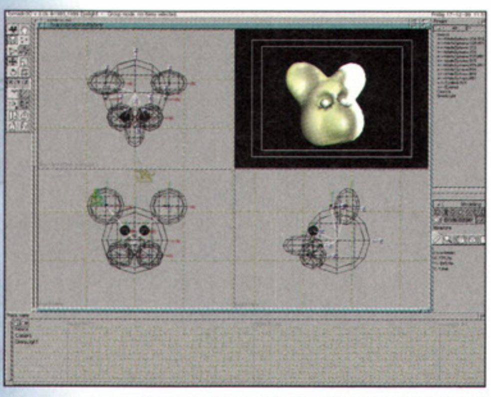
Installation is a breeze and consists completely of dragging the *Tornado 3D* drawer to wherever you want it on your hard drive. The software should also prove to be popular with PPC card owners with the complementary graphics card, since *Tornado* not only supports PPC rendering, but also makes full use of the Permedia's 3D capabilities to provide a near-real-time preview window that's almost as good as a full render. The range of features the software offers is truly impressive and I'd be the first to suggest that Lightwave relinquish the throne for the king of 3D if I could get *Tornado* to perform half as well or reliably.

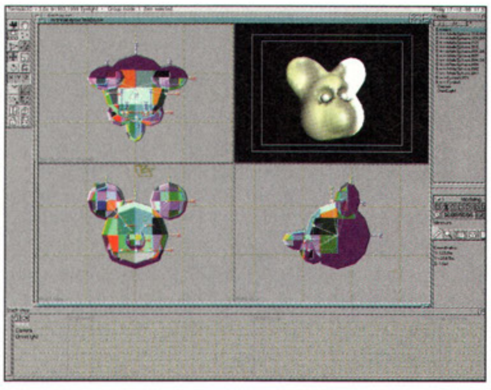
In addition to the usual polygon modelling tools that Amiga owners are familiar with from their uses of *Imagine* or *Cinema 4D*, you have the ability to use spline cages, MetaNURBS and MetaBalls (but *Tornado* doesn't include Constructive Solid Geomnetry objects à la *Imagine*), and the lighting comes in several flavours including full-on volumetrics. However, working up a scene complex enough to make use of these things is difficult.

On the three machines I tried *Tornado* on (two 060 Amiga 4000s with Picasso IVs and another 4000 with CyberStormPPC and CV3D card), it was prone to falling over at the slightest attempt at anything complex, and made me save the projects and objects every operation just to be sure. Even so, I had real trouble working up enthusiasm for the software after my umpteenth crash or lock-up. To paraphrase an ad, the trouble is it could be so good.

## A SNEAK PREVIEW

It would take half the magazine to talk about all of *Tornado*'s ground-breaking features, like the inverse kinematics and tied foot animation, but there isn't much point in talking about them at all if you can't use them in a meaningful way. Let's talk about some of the things that *Tornado* does well – better than any other 3D package on the Amiga. First up is the preview display. On a PowerPC, with a 3D graphics card, even the most realistic preview mode is almost worth working in unless you have very complicated scenes, but even on an 060, it's still preferable to the usual wireframe-plus-render you have to do to get some idea of how your scene is looking. The second is



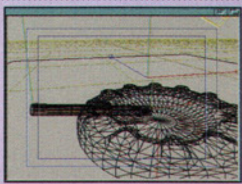


Created with metaballs in Tornado, this mouse looks simple in the tri-view, but you can see from the preview window it's a tricky object to make with polygons. The two pictures show it in unselected and selected state.

## THOSE PREVIEWS IN FULL

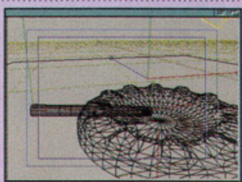
**The various preview modes that *Tornado* offers are far more useful than similar previewing functions in any other Amiga 3D rendering package. We took a standard scene off the CD (I don't agree with smoking, but that scene offered the best differentation between the preview modes) and looked at it on a 4000 with a CyberStorm MkIII 68060 with 64M RAM on the board. The graphics card was a Picasso IV running P96 v2.0 and it was in a 1024x768 mode in 16-bit colour. The timings for each were pretty sketchy, but they give you an idea of what to expect.**

### 1. Wireframe – less than a second



Your bog standard wireframe preview mode – familiar to owners of any 3D package with a preview mode.

### 2. Culled wire – less than a second



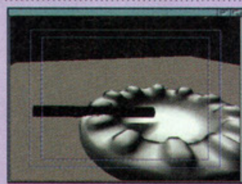
Same again, only it now performs back face culling to make the image simpler to understand. This takes slightly longer than plain wireframe.

### 3. Flat shade – less than a second



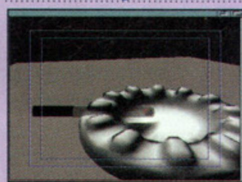
Now with the polygons coloured in and allowing for shading according to the light present. Only the first light source is taken into account.

### 4. Gouraud shade – less than a second



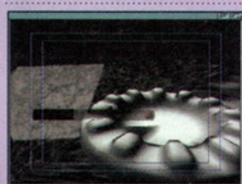
Gouraud shading interpolates the vertices between polygons to give a more smooth appearance. It should be familiar from umpteen megademos.

### 5. Transparent shade – a second



Transparent shade mode is the same as gouraud shade mode with the exception that any transparent objects are given a 50% transparency.

### 6. Texture shade – a second



Same as above, but this time with the first bitmaps applied to textures rendered as colour maps. It's a quick and dirty mode, so large objects extending in perspective won't look right.

### 7. Realistic – less than two seconds



Getting better, but slower. All lights are taken into account, as are shadows and fogging effects and it's the first mode in which NURBS and MetaBalls are rendered correctly.

### 8. Photorealistic – less than 10 secs



The best approximation of a scene without rendering. This mode uses all the same tricks as full rendering with a couple of minor exceptions.

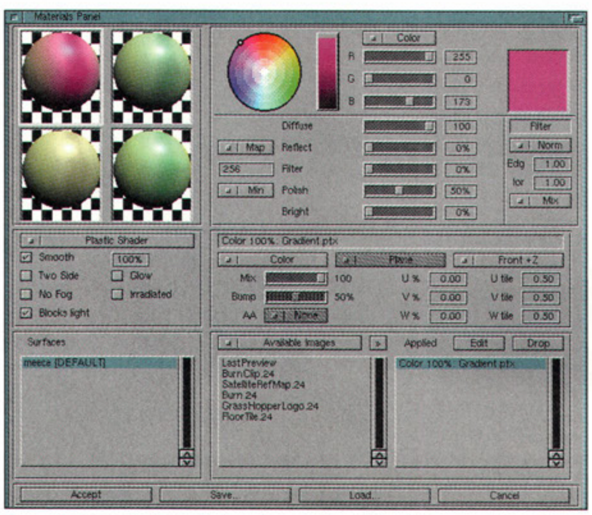
### 9. Final render – 135 seconds



We rendered the image at the same size (410 x 302) in AA Standard mode, with Depth of Field turned on for the full effect.

*Tornado*'s Materials module (including its meshpaint facilities which allow you to paint a bitmap that is wrapped around your object). While it's overly complex compared to Lightwave's, *Tornado 3D*'s Materials requester gives you previews of your textures and you can undo three times since the four windows update individually every time you make a change. The materials requester is one of the most powerful parts of *Tornado*, but again, not perfect. The save/load requester could keep a material that was previously loaded or saved in the selection line to speed things up, and it's difficult to edit some of the procedural textures satisfactorily.

Your objects will have flat shading applied when selected, so you can judge where lights are, but the user interface is very slow to react to changes, so you can easily find your objects cast to one side of the screen because, even though you let go of the mouse button, *Tornado* doesn't realise as much and moves the object to where your mouse is now.



**Tornado's Materials window is excellent for giving an idea of what a texture is like and allows three undos.**

### THE FINAL SCORE

The list of facilities that *Tornado* provides continues: you can have true volumetric objects, particles, bones, particulate hair, there's a complete scripting language called Golem that I haven't even had the time to look at, and you have ten layers to play about with. The user interface is much improved over the previous version, but all that's for nought if the machine continually crashes while using the program. Even while I've been writing this review and getting screengrabs, the machine has been crashing because of *Tornado*.

I would love to give the package 110 per cent, but I can't. We're sticking to our review scoring policy in the contents page and as such, I don't feel it deserves as high a score as it could get. However, it is refreshing to see such a professionally produced software application on the Amiga these days. Not only does *Tornado* come with a really big manual (which is still not enough and rehashes lots of tutorial material from the previous version), it even has colourful packaging. The CD may still be produced on an individual basis, but even so, you get a lot of software for your money. At the end of the day we say roll on version 3.1, let's hope the bugs are squashed before anything new is added.

**Ben Vost**

**SUPPLIER: Blittersoft**
**TEL. 01908 610170**
**PRICE: £299.95**
**REQUIREMENTS: FPU (or CPU with built-in FPU), CD-ROM drive**

## Pros and Cons

- \+ Fantastic features
- \+ Superb previewing
- \+ Excellent results
- \- Lousy stability

**OVERALL VERDICT:**
**This could be such a brilliant product, so it's with great pain we only give it:**

# 76%

# PSXPort

## For high-tech gaming you need a high-tech controller so put that spare PlayStation joypad to good use with this simple interface

Game technology has advanced considerably on the Amiga since the machine was first released; alas, Amiga game controllers have not. The standard control method is still the twenty-year-old, Atari-style, single-button digital joystick. Some software does permit the use of CD32 joypads, but these devices are not widely available and are of poor quality anyway. So, wouldn't it be nice if we could use those groovy PlayStation controllers on our Amigas?

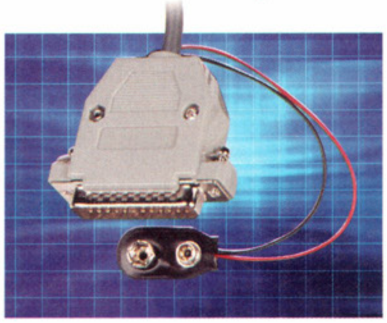
Well, now we can. PSXPort is a hardware and software solution that allows you to connect PlayStation input devices to your Amiga. It consists of a simple cable, a floppy disk with some driver software and, sadly, a shortage of documentation.

### NUTS AND BOLTS

One end of the PSXPort cable plugs into your Amiga's parallel port; the other has a connector for attaching a single PlayStation device. If you have a Multi-Tap, up to four controllers and four PSX memory cards are supported.

**PSXPort supports joypads, mice, wheel mice and even dual-shock controllers so now you can really feel the kickback of that gun you fired**

The floppy contains the device driver for the port (in two forms, one for slow and one for fast Amigas), a tool to make any PSX controller look to the operating system like devices connected to the standard joystick ports, some brief documentation and some briefer developer material. No installation script is provided, but it is a simple task to copy the relevant bits to where you want them to live on your hard drive.



It may not look like much, but the PSXPort is a neat piece of hardware.

The psxport.device driver is equivalent to the gameport.device – the AmigaOS component which deals with accesses to the standard joyports – but instead deals with controllers connected to the PSXPort. Units 0 to 3 are the four controllers plugged into your Multi-Tap (without the Multi-Tap you just have a single device, unit 0) and units 4 to 7 are the memory cards. Similar to the gameport.device, the PSXPort driver can automatically detect what type of controller is connected at each unit and return appropriate input events. It supports joypads, mice, wheel mice and dual-shock controllers (including both analog sticks). The memory card units allow block reads and writes of data.

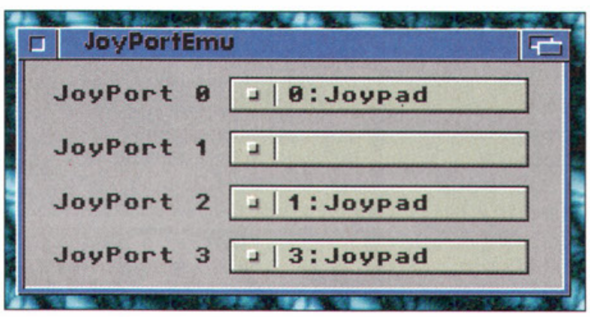



Digital Images' port of the Psygnosis hit, WipEout 2097, is just one of the games that benefits from a decent controller.

The ability to access PSX memory cards on your Amiga might seem fairly pointless, but if you already own a PlayStation it is actually quite useful. For instance, there are several sites on the Internet where you may download saved game postions for various PSX titles. This is great for cheating and seeing levels that you've never reached. However, no software is provided with the package to handle memory cards although the driver supports them. A tool like the shareware *MCControl* (available from the Aminet) would be great, but it doesn't currently work with the PSXPort hardware.

### DEVICE DECEPTION

While it is all well and good for the PSXPort to have its own custom driver – after all, this




JoyPortEmu fools AmigaOS into thinking that your PSX controllers are actually connected to the standard joystick ports.

### BEING IN CONTROL

**Now that Amiga users have the potential for using modern control devices for playing games, let's hope the games developers take advantage of it. Any software that requires directional control and more than one fire button would benefit by supporting PSXPort.**

**The endless number of 3D games being ported to the Amiga can be made a lot more enjoyable with a decent control system. Take *Doom*, for example. You could set up the left, right, up and down controls as you would expect and one of the joypad buttons for firing. Another button could then be assigned for swapping weapons. The two shoulder buttons would be used for strafing left and right. Having all these controls grouped on the pad makes the game a much smoother experience. You don't have to keep stop to find a particular key on the keyboard.**

**A better control system becomes more important as games become more complex. Forthcoming conversions, such as *Heretic 2*, *Shogo* and *Freespace*, should make it a priority to support PSXPort.**



Will Heretic 2 support the PSXPort?



## BUTTON MAPPING

| PSX Button | CD³² Button |
|---|---|
| Cross | Red/Select |
| Square | Green/Shuffle |
| Triangle | Yellow/Repeat |
| Circle | Blue/Stop |
| Start | Play/Pause |
| Upper left shoulder | Left shoulder/Reverse |
| Upper right shoulder | Right shoulder/Forward |

means new games can get full control over any PSX devices – it is not much use for existing software. To overcome this, the PSXPort package is supplied with a tool called JoyPortEmu which makes any of the four PSX devices emulate a corresponding device connected to one of the standard joyports. It does this by patching the `ReadJoyPort()` function of lowlevel.library.

Lowlevel.library is a standard shared library that was originally created for the CD³² and contains a hotch-potch of routines for game programming, among them functions for reading game controllers. The `ReadJoyPort()` routine supports up to four controllers, the first two of which are those connected to the two joystick ports. It also automatically detects what type of device is connected at a specific port and returns a status code appropriate to the controller type.

The emulation software allows you to map the four controllers connected to the PSXPort in any order onto the four devices supported by lowlevel.library. This is really handy since plugging and unplugging devices with the power on tends to make the psxport.device hang. It even allows you to swap devices (virtually) in the middle of a game. For each lowlevel.library port you simply select which PSX device you want it to use instead; the default setting for each unit is a pass-through mode.

The psxport.device supports all the buttons of a standard PSX joypad and even the analog sticks of a dual-shock controller. The emulation, however, must map these buttons onto the CD³² buttons. Not counting the directional controls, the PSX joypad has ten buttons, the CD³² only seven; hence, some of the PSX buttons are unusable under emulation. It would be great if the software allowed you to choose how the buttons are mapped, but, no, it is fixed (see boxout). The PSX select button and the lower two shoulder buttons get left out. The latter is rather annoying, since I find them much more comfortable to use than the top two.

AmigaOS provides no functions for reading analog joysticks – games which permit the use of such devices must access the hardware directly – so there is no means to provide emulation. Consequently, you may only use the analog sticks on a PSX controller with software that supports them specifically via the driver.

Despite these caveats, in practice this emulation scheme works well for software that uses lowlevel.library to read the game controllers. But unfortunately this is only one method out of a possible three for doing so. The dirty and most common alternative is simply to bang the hardware directly. The other, and this time legal, method is to use the gameport.device driver. The emulation is no good for software that uses either method and this means the vast majority of games. Newer software which doesn't ditch AmigaOS and can cope with a CD³² controller – such as the ports of *Doom*, *Hexen*, *Heretic* and *WipEout 2097* – all tend to use lowlevel.library and so can be fooled into reading a PSXPort controller with the emulation.

## DUAL SHOCKING!

**PlayStation dual-shock controllers feature a simple mechanism for providing tactile feedback from games: they contain two software-controlled motors upon which are mounted eccentrics. When switched on, these eccentrics vibrate the controller as they rotate. This is a great method for breaking out of the otherwise strictly one-way physical communication medium. A brief burst from one of the motors can be used to simulate the recoil of firing the gun or hitting an obstacle when driving. PSXPort supports this via its driver software, although the documentation is rather vague on how to achieve it. A PP3 battery is required to power the motors and connects to the PSXPort cable.**

## STICK IT TO ME

The PSXPort package does have some areas which need improvement. Although the *JoyPortEmu* software does its job functionally and as well as could be expected, it could do with a cosmetic overhaul. For instance, you have to configure its settings every time you execute it. (The only alterrnative being to put the unfriendly shell command provided somewhere in your startup sequence). It should have been implemented as a commodity that you could just drop into your WBStartUp drawer and it should allow its settings to be saved.

The other shortcoming of the package is the lack of documentation – both for users and developers. Ideally, Blittersoft should make the psxport.device public domain, so that any games writers can use it free of charge. This would increase the likelihood of future games supporting the PSXPort. It would have been useful to have some example source code to show how to access the device and maybe even a simple tool to test that it works.

Nevertheless, PSXPort is a novel solution to the problem of providing a more modern control method for playing games. At this price, it is a must-have for any PlayStation-owning Amiga user.

**Richard Drummond**

**SUPPLIER: Blittersoft**
**TEL. 01908 610170**
**PRICE: £20**
**REQUIREMENTS: OS3.1**

## Pros and Cons

+ A simple and elegant solution
+ Emulation works for well-behaved software
- Not supported by the majority of games
- Needs more documentation and example source code

**OVERALL VERDICT:**
**A great idea that will be more useful when games start supporting it directly.**

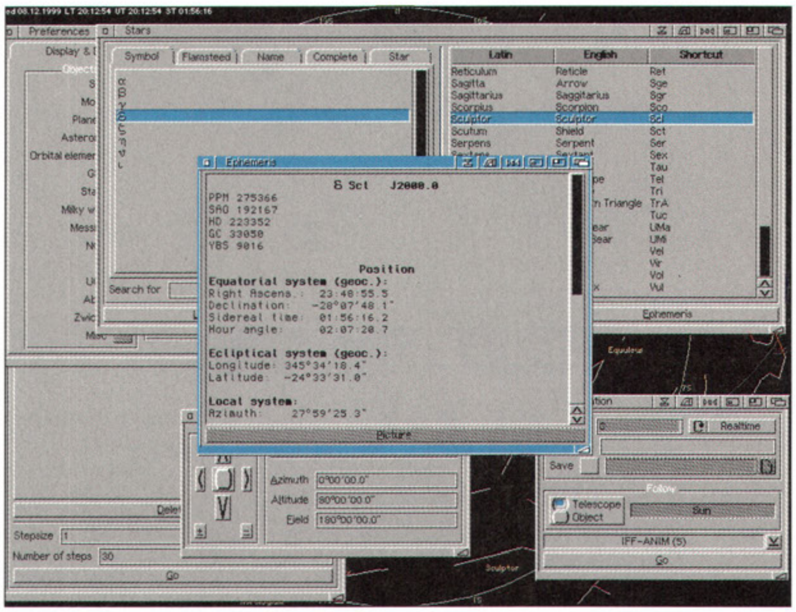
# 79%

# Digital Almanac II

## Discover the best way to view the heavens without getting frostbite

Space. It's not as empty as you think. Well, proportionately, it is actually probably emptier than you think, but that doesn't stop it from containing hundreds of thousands of stars, and who knows how many other planets, comets and asteroids. And that's just the ones we can see from Earth.

*Digital Almanac* is an astronomer's friend. It plots the night sky, and all the objects in it, for whatever day, year or place you happen to be, including off-world locations. Such software is invaluable to keen astronomers and beginners alike. Not only does it tell the less informed what they are actually looking at, or perhaps more usefully, where they can find something they want to look at, but it also tells experienced astronomers where everything should be – invaluable for spotting undiscovered comets and asteroids which are often overlooked.

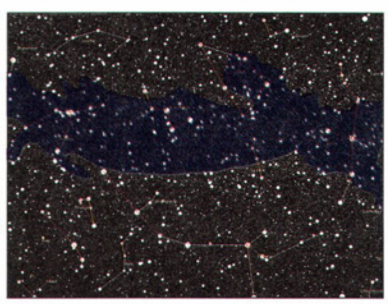


**Discover where the planets should be before you start looking for them.**

> **Information for star-gazing in a dozen German cities, Amsterdam and Kansas city is included but the rest of us have to provide it ourselves**

It has to be said that installing this software is not straightforward. The installer supplied seemed to miss out a few things that it later wanted, and you also have to fiddle around with your MUI settings manually if you want the software to work properly. Setting up for a non-German locality is a bit more involved too. Because the visible night sky is very much dependent on where you live, you must set up specific information for where you are viewing from if you want to get an accurate depiction of the sky. This includes information like latitude and longitude, but also height above sea-level, average air pressure and so on (for a really accurate view). The developers have kindly included all this information for a dozen German cities, Amsterdam and Kansas City for some reason, but star-gazers elsewhere will have to provide this information for themselves.

Once the ordeal is over however, you can get a pretty accurate view of the night sky. The software has data for stars down to a magnitude of 16, which is very dim indeed – you have more chance of seeing Ben get a round of drinks in (Ha! – Ed). However, you can easily customise the settings to show stars of a certain magnitude or brighter, otherwise all you'll see is a mass of white dots which you won't be easily able to correlate to anything you can see in the sky. Stars can be displayed simply as white dots, or they can be coloured to depict their brightness in the sky – brighter stars can also be made larger onscreen, and this really does help you identify the patterns in

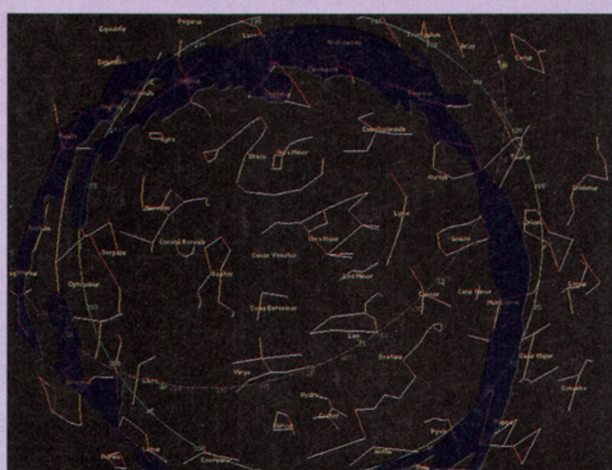


**The brighter stars can be made larger so what you see looks more realistic.**

### TWINKLE, TWINKLE...

**Here is just some of the data contained in Digital Almanac II:**

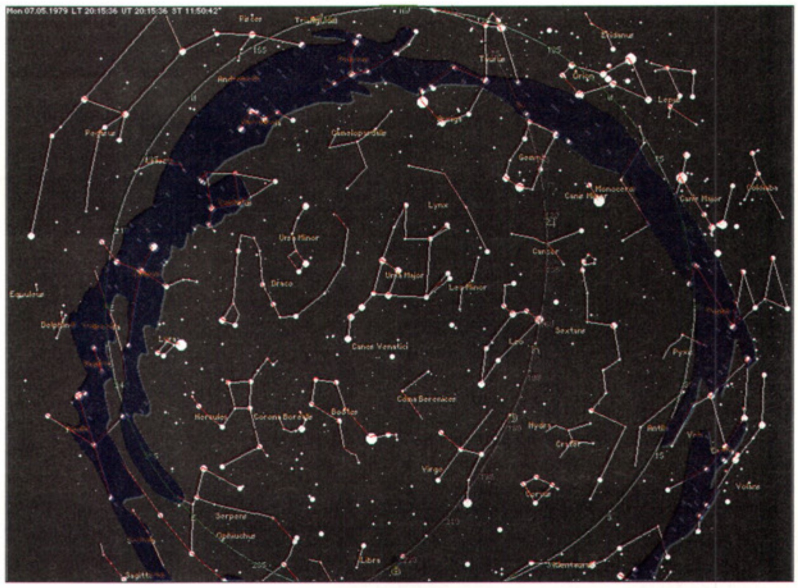
- **Over half a million stars in the star catalogue.**
- **40,000 deep-sky objects (e.g. distant galaxies).**
- **More than 56,000 local planets, asteroids and comets.**
- **All the (recognised) moons of Jupiter, Saturn and Uranus.**



**Now you can write your own star-sign column for the minions.**

the sky above you.

All of the various categories can be turned on and off – which is handy as it is difficult to properly observe the motions of comets and the like when all the stars get in the way. You can also optionally have the objects named on screen, or planets appear with their name or symbol.



**Choosing to have the names of constellations on the screen is a great help for amateur star-gazers who need help recognising them.**

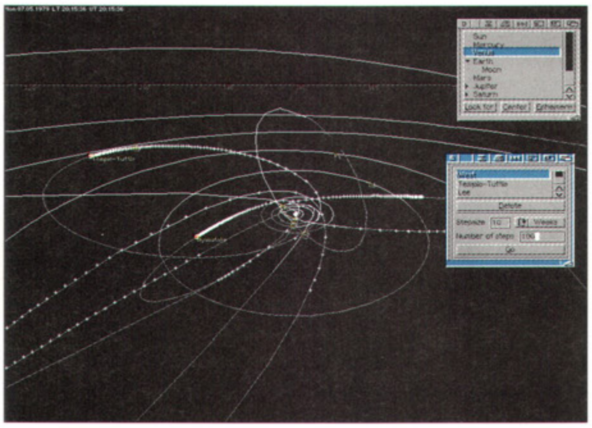
## THE DETAILS

If you zoom in closely to an object like, for example, Saturn, you'll be treated to an excellent view of the planet in all its glory. Textures are mapped onto planets, and Saturn appears with all its rings in the right place. As mentioned before, the moons of planets are also properly tracked by the software, so on the zoomed-in view you can even see things like the precession of Io across the face of Jupiter. In fact, for studying planetary motion, the software includes a special orrery mode, which depicts all the planets along the lines of their orbits. Very handy for determining when they are next going to line up and produce devastating environmental effects on the earth, as they were predicted to do in 1983.

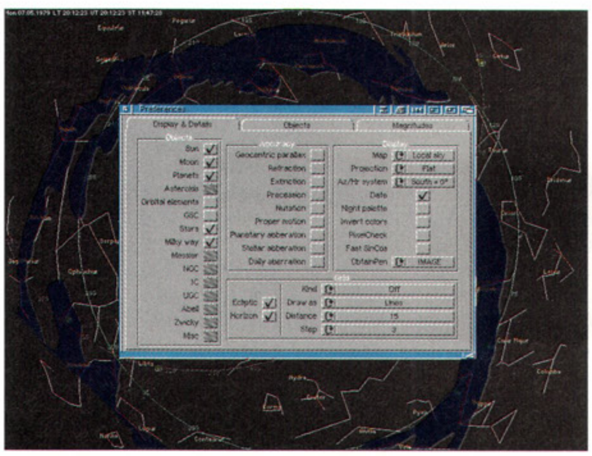
## MORE FEATURES

There are some nice touches which manage to be clever and obstructive at the same time. For example, the Telescope panel has a field in it where you can select your point of view (with Earth as the default). If you open, say, the Solar System panel, you can then drag and drop planets of moons into the Point Of View field to change where you are looking from. That's all very well, but it would be easier to have a few common ones in a pull down menu.

The reliance on loads of windows on the screen can also be a problem. For example, if you are playing around with the date, to look for a specific event, the window fills up quite a fair bit of the screen, so you've got no chance of actually seeing what is going on without closing down the window and then having to open it up again to try another date. There are useful features though, like the tracking. Although it isn't terribly well explained, it is possible to get an animated display of an object over a period of time, with its position depicted by a series of crosses – excellent for watching the path of comets through the solar system.



**Predict the future with the special orrery mode.**



**You can choose how much or how little you want to see of the universe.**

Standard animations can also be generated. You can quite easily create an animation of the night sky as the constellations move past in the course of a night, or even as the constellations themselves shift over a number of years. There is even support for Quicktime or MPEG animations, if you have the tools to play them back.

ARexx support is included, with a comprehensive list of commands, although the Amigaguide file that pertains to them doesn't really do a very good job of explaining their uses. It would be quite possible to build scripts to perform all sorts of useful astronomical functions (but I'm not writing them, okay?).

## WHAT'S OUT THERE?

The competition for this software has pretty much ceased to exist. Virtual reality labs no longer produce *Distant Suns* for the Amiga, which was a lot prettier and easier to use, but lacked some of the depth of this product. Syzygy's *Digital Universe* is better, but somewhat limited in terms of its catalogues – the original version was shipped on 14 floppy disks, so space didn't permit a lot of touches supplied by *Digital Almanac*. Version 2.0 of *Digital Universe* was to be released on CD for the Amiga, but hasn't yet appeared, and in the current climate, might never. However, in many ways it was a better piece of software. *Digital Almanac* is more up to date, has more comprehensive star catalogues, more pictures, but is certainly a lot less pleasant to use. It is also worryingly unstable in certain circumstances, which the developers put down to difficulties with CyberGFX (if you happen to use it) or MUI preferences. I appreciate the difficulty of producing a complicated piece of software like this when most Amiga owners now have every system hack known to man installed on their machines, but my version of *Digital Universe* still works…

If you are itching for the latest, most comprehensive guide to the stars on your Amiga, this is pretty much the only choice at the moment. It has been put together pretty well, but there is still plenty of room for improvement, especially with the documentation.

**Nick Veitch**

**SUPPLIER: Epic Marketing**
**TEL. 08700 110013**
**PRICE: £24.99**
**REQUIREMENTS: CD-ROM drive, MUI, 4M RAM**

## Pros and Cons

- **+ Huge star catalogue**
- **+ Orrery and planetarium modes**
- **− Difficult to set up**
- **− Not easy to use**

**OVERALL VERDICT: Up to date and comprehensive but to get the best out of it takes time.**

# 78%

# SuperView Productivity Suite II

Is it a bird? Is it a plane? No! It's *Superview*! Faster than a speeding bullet, more complicated than a tax return!

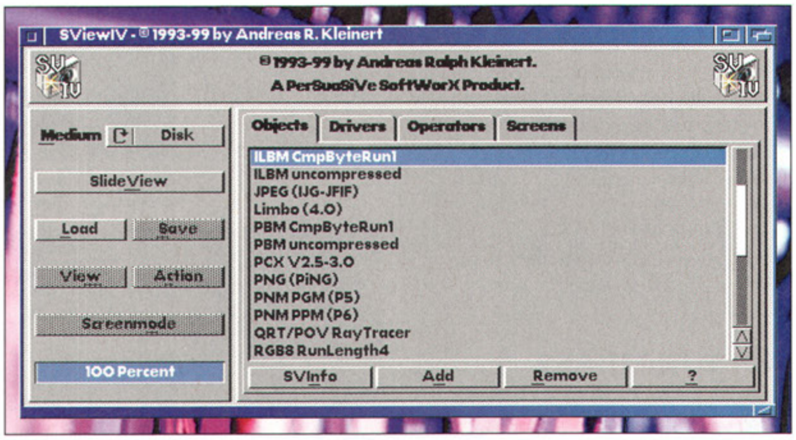
The last time we reviewed the *Superview Productivity Suite* was back in the February issue last year. All this time and has anything changed? *SuperView* has apparently taken another leap forward. I say "apparently" because I'm hard pushed to spot the difference between this version and the one I last reviewed. One thing is certain, however, *SPSII* is not much more user-friendly than *SPSI*.

## TEDIOUS BEGINNINGS

We'll start with the Installer since that's where you'll start. The sheer number of options will make this a lengthy process in anything other than Novice mode, and even if you make the decisions suitable for your machine, *SuperView* still overrides some of your decisions. For instance, it installs all the catalogues for the numerous different languages *SuperView* is available in to your hard drive, even if you are a dedicated monoglot, and gives you no aid whatsoever with rather terse instructions and no help-messages.

**As SuperView doesn't support OS3.5 and still struggles to be user-friendly in many areas it's impossible to give it a decent percentage mark**

Okay, you're only going to install once, so some of these things can be forgiven, as can the fact that *SuperView* doesn't check to see if you have particular libraries (it can't tell whether you have a graphics card, nor what sort it is) so you'll have to go back and do a separate install of the PowerPC modules and the wizard.library that *SPSII* uses for its GUI. Lastly, you also need to create your own keyfiles for the modules. The number is written on the inside of the CD front cover, but it's one of those huge random collections of numbers and lower case letters. I understand why it is necessary, but again, the installer should do it for you. So far, so slapdash.




**That's it. The whole interface. It's that interesting. Are you still awake?**

## A LACK OF SUPPORT

Then we come to the problem of OS3.5 support. The icon loader won't work with OS3.5 icons (but will load NewIcons and convert MWB icons to NewIcons). There are a bunch of NewIcons on the CD, made by OliverTacke, one of the people who has been busiest in making OS3.5 icons, but these, while being in the GlowIcons style, are still NewIcons. We received this disc at the start of December, not that long after the release of OS3.5 or its developer disc, right? Acceptable? Wrong.

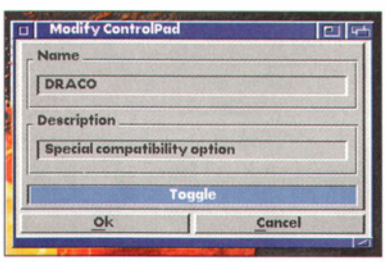
OS3.5 is probably the most important event in recent Amiga history and absolutely essential to the continued existence of our platform, so new programs should support its extensions to the OS. While I'm happy to agree that there wasn't much time to implement these things, this CD is now immutable which means that people buying it in five months' time will be faced with the same problem. It would have been better to wait until there was better support for OS3.5 before releasing the new version.

## HELP AT HAND?

There are still the problems of a lack of user-friendliness – cropping still works by entering numbers manually and you can enter figures that bear no relation to the image that aren't trapped. The help system doesn't appear when you hit the help key, but rather when you press RAmiga-p – the usual shortcut for printing. Instead the help key activates the help function so that when you next hit a button in *SV*'s GUI the AmigaGuide will pop up. Hitting the help key again turns off this functionality but it's so easy to forget, and what happened to using the OS-sanctioned way of doing things – move the mouse over the button you want help with and hit the help key?

Most programs get a better score when a new version is released, but sticking rigorously to the reviewing guidelines, this isn't possible. Not only does this get a lower mark to more accurately reflect the quality of the product, it gets a lower mark because of the fact that the things I complained about last time haven't been addressed and rather than being a step forward, *SSII* almost seems like a step in the reverse direction.

**Ben Vost**




**Special compatibility option?! Wow! I'm so pleased that SPSII has one of those!**

**SUPPLIER: Various**
**PRICE: £29.95**
**REQUIREMENTS: CD-ROM**

## Pros and Cons

+ Registered datatypes
- Poor installer
- Poor user interface
- Poor documentation (albeit in about 5,763 languages)

**OVERALL VERDICT: A disappointment.**

# 49%

# Twister Mark 2

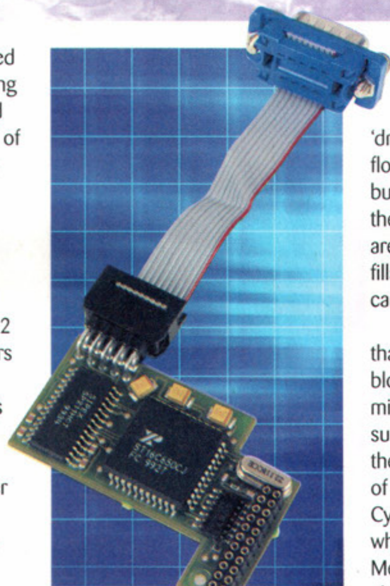
## It's the way to keep all those A1200 clock ports ticking faster...

Kato's Twister Mark 2 is a fast buffered serial port for the A1200, resembling Hypercom 1, IOBlix1200, Gold and Silver Surfers. It fits on the right-hand end of the clock port inside an A1200. A 10-way ribbon cable header carries signals out.

The board is shaped to leave clear access to the Kickstart ROMs, for compatibility with Power Flyer, BlizzardVision and FlashROM expansion.

It's hard to distinguish a Twister Mark 2 from a Silver Surfer. German manufacturers DCE redesigned Kato's original Twister circuit to fit the same asymmetric space as the Silver Surfer, itself a reworking of the Hypercom design.

But the parts are not the same. Twister uses a later version of the StarTech serial port controller – a 16650, rather than the commonplace 16550 – refined to avoid problems on PCs which have slothful interrupt response. This is a key difference.



**Serial ports just seem to get faster and smaller don't they?**

### HANDSHAKES

Serial transfers use two wires to send and receive data, one bit at a time. This relies on the receiver always being ready, so extra 'handshake' wires indicate when the receiver is paying attention; they're known as Request To Send and Clear To Send, or 'RTS' and 'CTS' lines. When the receiver is busy, it drops the RTS line; the transmitter should sense this on its CTS input, and delay further transmissions. Another pair of wires, DSR and DTR, regulate data going the opposite way.

Commodore's serial port signals the processor when a byte has been received, and stores it while the next one is collected. It's up to the processor to respond promptly, either by collecting bytes as fast as they arrive, or by 'dropping RTS' to stem the flow. Later interfaces have buffers to store a few bytes in the meantime, but over-runs are still possible if the buffer fills up before the processor can empty it.

Commodore ruled that interrupts should never be blocked for more than 250 microseconds, but some suppliers disobey, simplifying their products at the expense of system-friendliness. CyberGraphX blocks interrupts while swapping screens, Kato's Melody transfers audio in 4K chunks, and some old samplers and interfaces block interrupts while they copy data – if your Amiga ever hiccups like a 'fast' PC, this is probably the reason.

Like the old Motorola-based Multiface 3, Twister's hardware can tweak the handshake lines when its buffer becomes full, even if the processor is locked out. This makes it reliable and compatible with system-hogging applications, without significant loss of speed.

AMIGA FORMAT GOLD

### INSTALLING

The standard installer copies the 4K driver to Devs:, ignoring a 64K program on the same disk which can disable hardware handshake. Kato's website explains that it's only needed for dodgy modems.

You divert programs to Twister by typing the name twister.device in place of serial.device in your terminal or Internet application. There are no mountlists or serial port GUI preferences; the driver seems fixed in the ubiquitous 8N1 eight-bit raw format, without parity or break checks. If you don't know these terms, you probably don't need the feature. It's simple, and what you get works, but Hypercom, IOBlix and the old Zorro giants GVP and bsc, offer far more bells and whistles.

### CONNECTIONS

A foot-long ribbon cable carries Twister's signals to a 9-way D-type socket – it's up to you to mount this. The socket uses the PC AT pinout, rather than the RS232C 25-pin standard to keep the price down to Silver Surfer's level. Nine to 25-way adaptors are cheap, widely available, and many modems and mice already ship with adaptors or cheap nine-pin plugs.

Apart from the lack of rate and pin-out details, the eight-page A5 manual is well written and illustrated, showing how the Twister fits on the A1200 motherboard or in port 0 of a Z4 board. It's vital to plug it in the right way round.

The driver does not yet support extra clock ports cloned by Apollo, RBM or Individual Computers, but it's early days, and manual and driver updates are promised. Kato also offer comprehensive web and email support, and Salvatore Stilo seems very keen to make the English manual his best.

### COMPARISONS

Twister is the most tolerant serial accelerator yet, with its big buffers and hardware handshaking. It mediates known hardware and software problems by preventing loss of data when the system is prevented from responding in the normal time.

If you've already got a serial accelerator and new drivers, the chances are that the buffers are adequate. It's only worth upgrading those to a Twister if some of your programs or devices cause data loss on serial transfers.

Kato's software is rather basic but competent enough for mainstream applications. Twister matches the speeds of any rival (and tends to better most), including MIDI. 691,200 baud is attainable, on short cables, but the handshaking is probably the key selling point.

**Simon Goodwin**

### PORT PERFORMANCE

| Rate | A1200 | CPU | Twister | CPU |
|---|---|---|---|---|
| 9600 | 0.8 | 93% | 0.9 | 98% |
| 19200 | 1.5 | 85% | 1.5 | 97% |
| 38400 | 2.3 | 78% | 2.5 | 96% |
| 57600 | 2.7 | 78% | 2.9 | 96% |
| 115200 | 3.2 | 79% | 5.3 | 96% |
| 230400 | - | - | 10.9 | 96% |
| 460800 | - | - | 16.2 | 96% |
| 691200 | - | - | 24.5 | 96% |

**Twister Mark 2 versus motherboard serial rates and throughput in K per second on a very busy A1200/060/75. The CPU columns give percentage time remaining to run Dhrystone benchmarks and motherboard IDE flat out (pulling a steady 1.4 M/S from a small drive) while simultaneously transceiving serial data round a local loop. The screen was in just eight colours, or the motherboard would have given up a lot sooner.**

**SUPPLIER: Power Computing**
**TEL. 01234 851500**
**PRICE: £24.95**
**REQUIREMENTS: A1200 clock port at Commodore address**

### Pros and Cons

- \+ Handshaking in hardware
- \+ Fits neatly as Silver Surfer
- \+ Works up to 691,200 baud
- − Bare-bones driver support

**OVERALL VERDICT:**
**A versatile Amiga accessory.**

**91%**

# Photogenics 4

## Throw away your fading felt-tips and discover what this art package can do

Having been a *Photogenics* user since the early days, the Almathera shambles following the release of *Photogenics 2* was disappointing. Consequently, it's great to see that Paul Nolan (the original author) has resurrected this powerful and unique software, which has been fundamentally redesigned and completely rewritten. Since the review of *Photogenics 4.0* back in issue 124, *Photogenics* has remained under steady development, with 4.2 being the current release version, along with a 4.3 beta version offering more enhancements.

Part of *Photogenics*' uniqueness has always been its layer system, where you paint to a "layer" instead of directly on the image. In *Photogenics 4* this has been expanded upon further, with the possibility of working with multiple paint layers for each image. *Photogenics 1.x/2* users may find the new version takes a little getting used to, but most of the concepts remain unchanged, so it won't take that long to get the hang of.

Worth noting is the splendid, highly customisable user interface – an immaculate design, in my opinion. Most Amiga users have probably dabbled with *Personal Paint* or *Deluxe Paint*, but *Photogenics* is an entirely different beast. For starters, images are worked upon in full 24-bit true colour, so you're not restricted to a 256 colour palette. I'll gladly admit that I'm not a good artist, but I find that *Photogenics* allows me to effortlessly manipulate and retouch images, create logos and much more. In contrast, more artistic types will find *Photogenics* an excellent tool for creating masterpieces from scratch using the plenitude of available media drawing tools. In fact, *Photogenics* has numerous different uses – it can also be used for simple file format conversion, and it's ideal for retouching or enhancing photographs/scans. *Photogenics*' unique way of working with images makes it very powerful indeed.



**Here, the AirBrush was used in Colourize mode to re-colour the car, and Pixelize mode was used to ghost the sponsor names. This took a couple of minutes at the most.**

### NEW FEATURES

Many new features have been added since version 4.0, including both improved and totally new paint-on image processing modes. When the mouse pointer is over the toolbar, a feature called "Tool Tips" will pop up a quick explanation of the respective tool, which is handy, especially for beginners who may not be able to remember what all the icons mean. A Media Cache has been added, which speeds up the Media loading times. Also of note are the Scale and Text tools, which have been improved. Among the various other new features many bugs have also been quashed, as you would expect. *Photogenics* is now less hungry on memory than it used to be, and with various speed improvements all-round, it's even more usable than before.

> *Photogenics 4 has certainly improved a great deal since the initial release, and it finally looks like most of the bugs have been ironed out*

### STABILITY

Probably the biggest downfall of *Photogenics 4.0* was that it was rather unstable, giving the impression it was a poorly tested and unfinished product. It's no surprise that this problem has been addressed. As a result, the latest version is far more reliable than 4.0 ever was. Having said that, there are still a few minor bugs present, like visual quirks in the user interface which appear now and then.

I found that most problems arise when running low on memory, so the moral of this story is that the more memory your Amiga has, the better *Photogenics* will perform. Nevertheless, *Photogenics* should really be able to handle such situations without crashing. Given the way *Photogenics* has progressed over the last year, I'm sure they'll soon be fixed in a future update.

### FILE FORMATS

Unfortunately, there are still only a limited number of image file formats are supported: BMP, IFF-DEEP, IFF- ILBM, JPEG, PCX, PNG, PPM and TARGA. However, these are sufficient in the most part, and unsupported file types can be loaded by the OS datatype system. The largest omission is that all the savers only support 24-bit output. For example, it is not possible to save an image out in a palette based format (it was possible with *Photogenics 2*) which ILBM and PNG support, of course – only the 24-bit modes are supported. GIF support is noticeable by its absence, although this may be included in a future release along with TIFF support, subject to licensing issues being resolved.

The PNG module was badly broken in 4.0, but this has been fixed and now you can also choose to save in progressive/interlaced format and set the compression level. Likewise, some of the other modules had bugs, which have been fixed too,



**The Smear media tool can be fun to play with. The RandomizeChannels mode was used on the hair – obviously similar to Randomize, but it messes with the colours too.**

## 4.3 BETA (RELEASE 67)

**A beta version (actually very stable and bug-free) of *Photogenics 4.3* is available from http://www.paulnolan.com, sporting a number of new features:**

- **Pressure-sensitive tablet support.**
- **Improved feedback with each image view now having its own progress bar.**
- **A preview plug-in shows the results of changing a paint mode's options without having to wait for strips of the image to be processed.**
- **Several new paint-on image processing modes: Threshold, Tile, GaussianBlur and Colourize.**
- **In addition to allowing the Red/Green/Blue/Brightness/Contrast/Gamma values of the image to be tweaked, the Adjust mode can now change the Saturation and Hue, making it an extremely powerful mode for colour correction and enhancement.**

including the Datatypes loader and TARGA.

## SPEED

*Photogenics* is reasonably fast, but even though it's faster than it used to be, there are still times when it really slows down. *Photogenics* sometimes just appears to sit there doing nothing, with the progress bars stuck at 100 per cent complete. We're not talking a few seconds delay here – sometimes certain operations may take five to 10 minutes, and that's on a 68060. In reality, *Photogenics* is using all available CPU power to complete its operation. The real trouble is the lack of visual feedback during these delays – you can quite easily make the mistake of assuming that it has crashed. I found that scaling images with paint layers was often very slow, as were some of the paint modes (especially after playing with their various parameters) such as Sharpen. The poor response times really are something which need to be addressed in a future version. Having said that, some of the paint modes have been speeded up, including the Blur (much faster!) and Convolve modes.

## NEW PAINT MODES

**What really makes *Photogenics* come alive is the variety of available paint modes. Since 4.0, new modes have been added including ChannelFlip, Sharpen, UnsharpMask, BizarrePixelize, Randomize and ChannelRandomize. If that wasn't enough, many of the existing paint modes have been improved too. For example, a Gamma setting has been added to the Adjust mode and DisplaceMap can now displace channels individually. Many of the paint modes contained minor and/or major bugs, but a huge amount of tweaks and fixes have been made to the paint modes, so things really do work very much better in this new version.**




**A simple example demonstrating some of the new paint modes. The new Colourize mode has been used with the text tool to mark each image with mode that was used.**

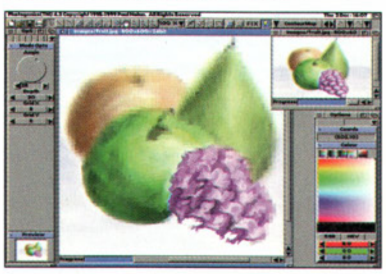


**53 paint modes are now supplied, many of which can be adjusted to produce vastly differing effects. A number of media types can also be used to paint with, including a host of fire effects.**

The 24-bit nature of *Photogenics* means you really will need a graphics card to get the best out of it. However, it does support 256 colour and HAM8 screenmodes, and I was surprised at just how nippy *Photogenics* is when using these modes, although the quality is obviously not as good as you can expect from a true colour graphics card.

## DOCUMENTATION

One of the shortfalls of *Photogenics 4.0* was lack of proper documentation.



**Images like this can be created relatively easily using the natural media, and here you can see what the ContourMap paint mode does to an image – similar to Pixelize.**



**The new HTML on-line help and documentation.**

Fortunately, *Photogenics* is now supplied with an HTML-based manual, which is certainly a welcome improvement over the short text file supplied with 4.0. It is still brief in places, whereas some areas really do need a better explanation. However, images of user interface elements are used to good effect in the documentation, allowing you to easily locate the feature you want to find out about. The documentation is used by the online help system, where Troels Walsted Hansen's OpenURL software (supplied) is utilised, displaying the relevant page in your preferred web browser.

## FUTURE

*Photogenics 4* has certainly improved a great deal since the initial release, and it finally looks like most of the bugs have been ironed out, so Paul has been able to spend more time adding enhancements and new features. Nonetheless, there is still room for improvement. In particular, *Photogenics 4* still doesn't have some of the useful features offered by its ancestor, *Photogenics 2*, although these are gradually creeping back in as new versions are released. Nothing major – just things like an AppIcon on the Workbench which was handy for easy loading of images, more load/save file formats, and so on. An ARexx port would also be very useful.

As *Photogenics* is still being actively developed, it's safe to say that it will be improved further over the coming months. In fact, Paul is currently working on a Linux version, which will in fact benefit the Amiga version because of the modular design of *Photogenics*, making it easily portable. Therefore, the Amiga and Linux versions will be pretty much identical, in terms of features.

If you fancy yourself as an artist, you'll be amazed at what *Photogenics* can do for you, and you may well find yourself addicted to experimenting with all the effects. *Photogenics 4* is still some way from perfection, but it's certainly well on its way – you will be hard pushed to find a graphics/art package as incredibly powerful, modern and innovative.

**Oliver Roberts**

**PUBLISHER: Paul Nolan Limited**
http://www.paulnolan.com/
**TEL. 020 8422 0610**
**PRICE: £59.99; upgrade from v1.x/v2 £45; free upgrade for existing 4.x owners**
**REQUIREMENTS: Min OS 3.0, 68030, 8M RAM, CD-ROM drive.**
**Recommended: 68060, 16M+ RAM, graphics card.**

## Pros and Cons

- \+ Slick, easy to use interface
- \+ Wide range of powerful media tools
- \+ Continually being improved, with free updates
- \- Can be sluggish and unresponsive at times

**OVERALL VERDICT:**
**Graphics packages don't get much more impressive than this one.**

# 85%

# ViewSonic VP181

## Be good to your eyes (but not necessarily bank balance) with these two new monitors




For the optimum view, you can twist and tilt the lightweight display or even hang it on the wall.

A new monitor is probably one of the most important purchases you can make for your Amiga. It's the one part of your machine you'll spend all day looking at, and yet a lot of people are willing to skimp on quality when it comes to their display. As more and more people are buying 17" monitors these days, the price has now fallen to near the cost of a 15" one a few years back and the 19" monitor is the new 17". This issue we have two new, large monitors for you to have a look at. One is a Mitsubishi CRT monitor, but the other is something of a first for an Amiga mag – a ViewSonic 18.1" LCD flat panel monitor. Since we can't seem to keep our hands off it, we'll have a look at that one first.

ViewSonic should be a name familiar to Amiga owners. They've made top-notch multiscan monitors for a good many years now, and while they don't specifically support Amiga owners, you should have no trouble with your graphics card.

I don't mention scan doublers or flicker fixers, because although the monitor actually worked far more nicely in lower refresh modes than a CRT would due to the inherent persistence of the LCD display, native AGA modes tend to look a bit pants. The problem is that although a 640x512 resolution should be ideal for this monitor, being exactly half its standard resolution of 1280x1024, and thus easy to interpolate, an Amiga doesn't actually just display a 640x512 screen. If you use one you may notice that you get grey borders around the top and left side of the image and that's because the Amiga is only showing you a 640x512-shaped portion of its maximum overscan screen, which is actually something like 768x576 big on a PAL Amiga, and thus not an ideal resolution for the ViewSonic to cope with. It also means that a non-overscanned resolution only fills a small portion of the monitor, and there aren't many picture controls on this beast.

Other resolutions look progressively worse the nearer you edge towards the nadir of 1280x1024 for the simple reason that LCD monitors are best at their default resolution and have to interpolate the picture for any resolution other than the one they are suited for. This is easy if the difference between the displayed resolution and the perfect resolution is great, but very tricky to do well if your favourite res is too close to that standard. This means that you really need a gfx card capable of handling 1280x1024 in whatever colour depth you prefer, which kind of cuts out the older 2M cards like the Picasso II as contenders, but is ideal for the PPC graphics boards or the Picasso IV.

**The colour saturation is excellent, the picture is bright enough to be a joy to use and you can even remove the pedestal and hang it on the wall**

But let's say you are running in 1280x1024, what's the picture like? It's actually bloody good. The colour saturation is excellent and the picture is bright enough to be a joy to use. Best of all, the problem of the picture disappearing if you looked at it at a slight angle is not present since this monitor can be viewed almost from the side. This ViewSonic also supports a portrait mode whereby you can twist the screen so it stands on its end, but there's no support for this on the Amiga as far as I know (it would be nice). The display can actually be raised or lowered on its pedestal or even removed altogether so it can be hung on the

### VIDEO IN

**The ViewSonic VP181 has several video connections, one for analogue graphics cards and one for the new breed of digital graphics cards that are available for the PC, but it also has a port for standard video connections too, in the form of a Y/C mini-DIN and an RCA composite signal in. This feeds to a Picture In Picture display that can be positioned anywhere you like on-screen. However, those with a bog standard Amiga shouldn't get their hopes up that they'll be able to use this display for their Amigas on this monitor – the biggest picture is only 315x235 on a 1280x1024 screen. The other resolutions get smaller with 250x195 and 230x165.**

**There are also connections for using this monitor's base as a USB hub and for the audio inputs, and thankfully, you don't miss out if you choose to have the monitor as a stylish wall hanging since the ports are duplicated on the monitor itself. However, we'd need to have a digital graphics card for the Amiga before we could make use of it in that way.**

wall. The pedestal has speakers built-in, but even at this price, don't expect audio marvels from them since they are like monitor speakers everywhere, tinny and lacking in bass response. However, they work well enough, just don't expect to be pleased if you often use your Amiga for playing audio CDs.

**This monitor consumes just 80W, it doesn't kick out anything harmful, unlike CRTs, and it's just about possible to pick it up with one hand**

So the question is: is this monitor worth its high price tag? For two and a half grand you could get yourself eight really top-notch 17" monitors or five reasonable 19"ers. However, you'd also get the electricity bill of New York city as one of the main differences between traditional CRTs and LCDs is their energy consumption. Our art Mac's 21" monitor sitting opposite me consumes 432 watts, just sitting there (most of which is kicked out as heat anyway). This ViewSonic consumes just 80W, and although the top of the monitor is warmish after having been on for a week now, the sides and bottom are still as cool as my desk. With the space and power consumption benefits, you also get radiation benefits since LCD monitors don't kick out anything harmful, unlike CRTs, and it's actually possible to pick this monitor up with one hand (just) should you need to re-position it. At the end of the day, I hold no illusions that £2,500 plus VAT is far too much for Amiga owners to even consider spending on their machines, especially given how inflexible the monitor is, but if you have the specific requirements that LCD fulfils admirably, this is a great choice.

**Ben Vost**

**SUPPLIER: ViewSonic**
**TEL. 01293 643900**
**PRICE: £2,500 ex VAT**
**REQUIREMENTS: As below**

## Pros and Cons

- \+ Gorgeous display
- \+ Great viewing angle and colour
- − Really expensive
- − Picture controls not brilliant

**OVERALL VERDICT: A lovely display if you can afford it and don't use many screenmodes.**

**80%**

# Mitsubishi Diamond Pro 900u

Mitsubishi aren't a name many associate with monitors, but they've been in the market for a good number of years now. Their new 19" range is exemplified by the model we've got in to review, the Diamond Pro 900u. Diamond Pro is Mitsubishi's name for their version of Trinitron and it shows. The image on-screen is as crisp as anything, colours are convincing and the sheer number of controls you have for adjusting picture parameters is astounding. Actually, they can be something of a pain, in the sense that there are far too many of them to make adjusting your monitor's picture an easy matter, and moving some of them results in a shifting of the picture so that you need to adjust something else, which means that you need to adjust something else, and so on. While the picture quality is great, I've been fiddling around with picture settings for some time to avoid compression at the top of the screen which squishes the menu bar and makes it very bright to no avail. I could change the graphics card settings through P96 Prefs, but given the sheer range of controls for this monitor it seems strange that I'd have to.

Once again, when we finally get USB, this monitor will act as a hub for USB devices and has two video inputs – the standard VGA 15-pin DSUB and also BNC connectors for the very best quality picture (it's how I use my monitor at home. The only trouble is that you can't use DPMS). The only other point to mention is the fact that this is a standard CRT, which means that it's big and it's very heavy. Very heavy. In fact when I put it on my 4000 and it wouldn't boot properly I thought it might have been down to the weight of the monitor pushing the lid down too hard, but it seems to be okay now.

Anyway, this monitor's price doesn't seem quite so attractive when you can get the Philips monitor I reviewed last issue for slightly less money, but a lot less space and weight. It's good, but it's not that good.




The Mitsubishi's controls can be quite overwhelming.

**Ben Vost**

**SUPPLIER: Mitsubishi**
**TEL. 01707 278684**
**PRICE: £399 ex VAT**
**REQUIREMENTS: Scan doubler, flicker fixer or graphics card**

## Pros and Cons

- \+ Crisp picture
- \+ Plenty of control
- − Size
- − Weight

**OVERALL VERDICT: A good quality monitor let down by reliance on old technology.**

**70%**

# UNIX Compendium

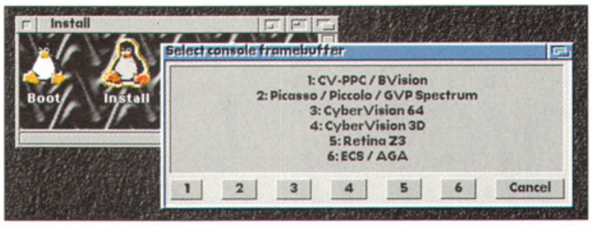
Have you got what it takes to be a geek? Prove your mettle with this UNIX collection for the Amiga.

UNIX and UNIX-like operating systems are experiencing something of a rebirth. It has always been popular for servers and workstations, but it is now finding its way into the desktop and the home. This is partly due to the explosion of the Internet, partly due to the Free Software movement and partly due to the inadequacies of a certain major operating system.

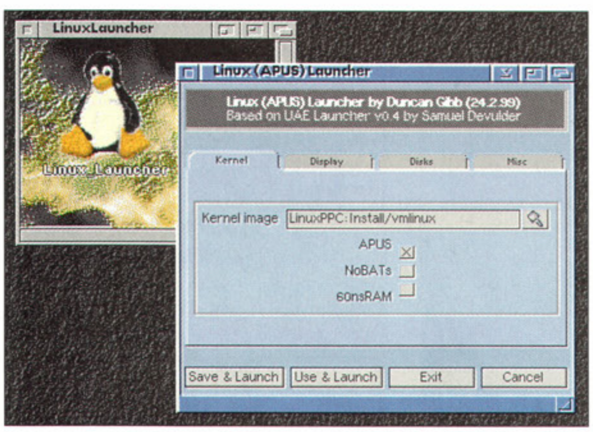
Amiga users who want to get in on the act will be pleased to know that one version of UNIX, NetBSD, exists for our machines and that Linux, the UNIX-like OS, also supports the Amiga in 68k and PPC forms. Both these systems are freely available, but

> Both distributions have been modified slightly for the Amiga, but the problem is that both releases are showing their age

to save yourself hours of download time, it is sensible to go for CD-ROM based distributions. The Amiga UNIX Compendium is a three-CD set which contains Linux-m68k, LinuxPPC and NetBSD distributions suitable for the Amiga plus, as an added bonus, the latest Geek Gadgets distribution and the current AROS snapshot.




**Installing Linux from the CDs is dead easy.**




**The Linux Launcher means that you no longer have to remember a huge string of boot and kernel options.**

## LINUX

The first processor that Linux was ported to from x86 was the m68k. In fact the Amiga was the first computer to be able to run Linux other than standard Wintel PCs. LinuxAPUS is a more recent project to run Linux on the PPC processor on Amigas with phase 5 PowerUp boards.

Both the m68k and the PPC distributions provided on this CD set are based on the RedHat distro. The m68k is RedHat's so-called Rough Cuts distro and is v5.1, while the PPC release is from LinuxPPC.org and is v5.0. Okay, both distributions have been modified slightly for the Amiga, but the problem is that both releases are showing their age. So, Redhat has just released 6.1 for Wintel boxes, but Linux development lags behind on other platforms. However, these CDs are way behind. For example, the PPC *glibc* package (the C support library) included here is version 0.9 while the current release for PPC is 2.1. Incompatibility problems are known to occur between the two.

Personally, I prefer Debian's Linux distribution to Redhat's, anyway, but beggars can't be choosers. While Debian-m68k is solid, their PPC distro hasn't reached a stable status yet.

Installing Linux on an Amiga is fairly straightforward, but the lack of an official distribution means that if you download the packages from a Linux vendor then you'll have to do a bit of customisation, especially if you want to run X. These CDs have everything configured to make the task as painless as possible.

The CDs contain two scripts for each Linux platform which allow you start the install or boot processes just by double-clicking an icon. They ask you a series of questions, such as what graphics card you are using and what screenmode you want. These should work on most machines, but you if you need to tweak kernel options, the Linux Launcher is provided. This allows you set to set kernel options with a simple MUI interface. The scripts supplied to install and boot the Linux-m68k distribution would not work for me as supplied. I had to resort to booting manually from the shell.

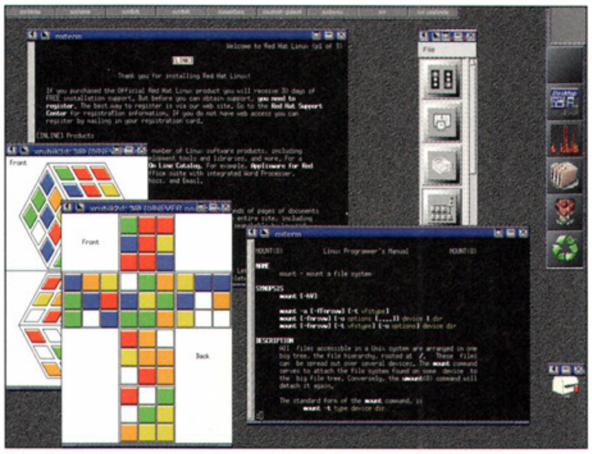
An oversight here is in the choice of Linux kernels. Okay, it is fairly easy to download a new kernel from one of the many Linux ftp sites, but Linux-m68k is supplied with rather odd builds of 2.0.33pl11 and 2.3.16 kernels. They are odd in the sense that don't include frame buffer drivers for most graphics cards. I suppose that 2.3.16 was the current bleeding-edge m68k kernel at the time this CD was compiled, but the latest stable release is and was 2.0.36. Why wasn't this included? Still the source code of the 2.3.16 kernel is supplied for both platforms, so you can configure and build your own kernel if you feel the need.

## NETBSD

If would prefer a real UNIX rather than the brash, upstart Linux then NetBSD is a good choice. There are various free BSD projects; the distinguishing aim of NetBSD is portability. The current stable release, 1.4.1 (the version included here), supports 16 platforms including the Amiga.

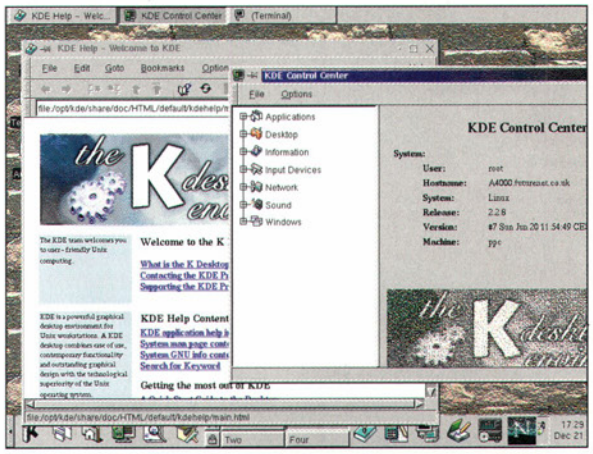
NetBSD is notably more difficult to install on the Amiga than Linux. Again, you must create separate partitions for NetBSD to live in. Unlike Linux, however, you cannot simply boot from the provided RAM disk image. You have to transfer the provided miniroot filesystem onto the prepared swap partition and boot with that.

NetBSD contains much the same packages as does Linux-m68k. You get the same development tools, *apache*, *lynx*, *X*, and so on. In some ways, the support for Amiga hardware such as Zorro cards is better on NetBSD. I have to say that I prefer Linux, though.



KDE is the default window manager for this LinuxAPUS distro. Shame it looks so much like Windows.

X with the NextStep desktop manager looks nice but is terribly slow on an 68k machine.




## AMIGA AND UNIX INTERCHANGE

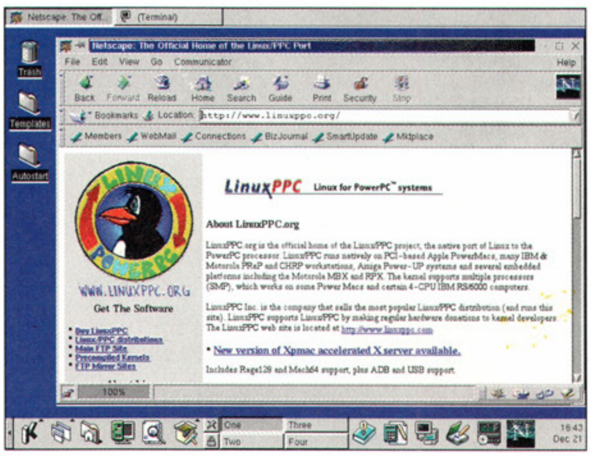
You don't actually have to run a separate operating system to experience a UNIX-like environment on your Amiga. The ixemul system provides a POSIX layer which enables a large proportion of UNIX-like software to be compiled without any significant modifications.

Geek Gadgets is a set of development tools built around the ixemul system. You get a UNIX shell and standard shell command, GCC C compiler, *make*, *cvs*, and much, much more. You also get packages such an Amiga X server, *apache* and *ghostscript*. It is great system for developing AmigaOS software if you are used to a UNIX environment and been the source of a lot of great, free software for the Amiga, such as early *Doom* ports, *PGP*, *TeX*, *GNUPlot*, etc.

**Why would you want to run a UNIX-like operating system on your Amiga? Because you can might be reason enough**

To flip the coin on his head, AROS is a system for providing Amiga compatibility on UNIX platforms – or, at least, that is one of its goals. The CD contains AROS binaries to run under AmigaOS and Linux on PCs and a full snapshot of the current AROS source tree.

AROS is still at the curiosity stage – you cannot do much useful with it yet – but it is an intriguing project nonetheless. They should have provided binaries for Linux-m68k, though.




One reason to run Linux on your PPC Amiga is that you can use Netscape. You'd be better off sticking to Voyager, though.

## WHY UNIX?

Why would you want to run a UNIX-like operating system on your Amiga? Because you can? This might actually be reason enough. It gives you another excuse to hang onto your aging hardware.

The serious reason would be if there was some software you want to use that is not available on the Amiga, maybe *GIMP* (the freeware image manipulator) or even *Netscape*. *Netscape* hasn't made it onto m68k platforms yet, but a PPC version is supplied with this LinuxPPC release. Quite frankly, you wouldn't want to run it on a 68k processor anyway. While Linux and NetBSD both run comfortably on a 68k Amiga, *X* does not. Even with a Zorro III graphics card it's not much fun. *X* is quite useable under PPC with a decent graphics card, but even then I still find myself hankering after the smoothness of Intuition.

Although Linux-m68k and NetBSD for the Amiga are both well-established and stable platforms, unless you have a specific need to use either, you are probably wasting your time. LinuxPPC, on the other hand, is another story. Many industry players are intent on developing the PowerPC as the Linux platform. Thanks to the APUS kernel, it is great way of exercising the latent power of your PPC 'coprocessor'.

**Richard Drummond**

## SOME UNIX HISTORY

UNIX is a multiuser, multitasking operating system developed at Bell Labs in the early 1969 by Ken Thomson. UNIX inherited much, including its name, from an earlier, overly ambitious project called MULTICS, which was cancelled dues to its complexity. UNIX was orginally implemented on the PDP-7, but the story really begins when it was rewritten in C in around 1973 by the language's inventor, Dennis Ritchie.

UNIX's portability has been a determining factor in its success. The other reason is that AT&T were not allowed to compete in the computer market due to antitrust laws. Unable to sell UNIX, they distributed it to various universities and research establishments and included the source code. The availability of the soure meant that anybody could modify and improve UNIX. This led to a proliferation of different versions.

In the early '80s, BSD (Berkeley Software Distribution) was first released. This contained many of the features that characterise UNIX today. Meanwhile, AT&T was broken up in 1982 and began to market UNIX properly. Their release evolved into what is now System V.

There have been attempts to standardize the many UNIX variants which led to the creation of bodies such as the Open Software Foundation an X/Open. POSIX (the Portable Operating System Interface for UNIX) is a set of standards which describe a system's interface which allows software to be ported easily between any compliant platforms.

The Linux saga began in 1981 as an experiment in multitasking on the 386 processor by Finish student, Linus Torvalds. It is not a UNIX since the kernel contains no UNIX code, but it is POSIX compliant and is distributed with GNU's UNIX-like environment and tools.

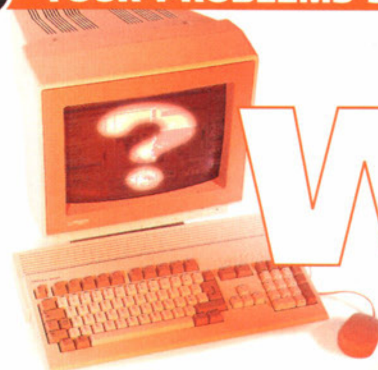
**SUPPLIER:** Various
**PRICE:** £25
**REQUIREMENTS:** Various, but minimum 68020+MMU for Linux-m68k and NetBSD, PowerUP board for LinuxAPUS

## Pros and Cons

- \+ Will save you hours of download time
- \+ The only complete LinuxAPUS CD distro
- \+ Painless Linux installation.
- \- I want Debian PPC

**OVERALL VERDICT:**
A cheap way to try out UNIX or Linux on the Amiga. It will date quickly, though.

**85%**



# Workbench

On the CD -In_the_Mag-/Workbench

The place to get your questions answered, and answers questioned

Email: amformat@futurenet.co.uk, putting Workbench in the subject line, or write to: Workbench • Amiga Format • 30 Monmouth Street • Bath • Somerset • BA1 2BW.

## TOWER A600

I have had an A600 for many years now and it has undergone substantial upgrades. The current spec is: A600, 30MHz Apollo 68030, 18M RAM, real-time clock, OS 3.1 ROM chips, Workbench 3.1 and a 350M hard disk.

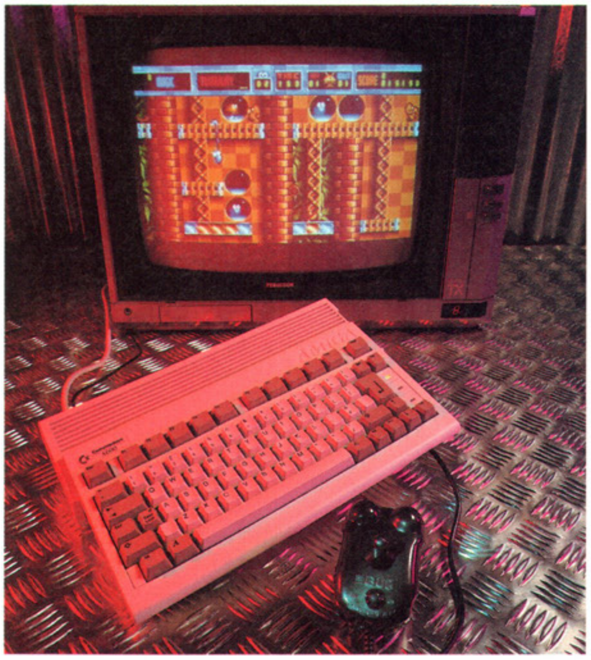
I have been considering adding a 230W power supply, four-way buffered IDE interface, CD-ROM drive, scan doubler/ flicker fixer, Workbench 3.5 and an SVGA monitor for some time now. I currently have the funds to proceed with this upgrade, but the one thing holding me back is the lack of AGA graphics on the A600. I have a software AGA emulator, but it is rather complex to set up and I have not got it running yet. Even if I do get it running I will lose sound.

So, is it in any way possible to put AGA chips in an A600? (I mean working – not just rattling around inside the case). Is it in any way possible to tower up an A600? If so, how, and who supplies the parts?

I also have experienced colour alteration: yellows look greenish and purples look brownish. This is not the monitor – a PAL TV. Could it be the RF modulator? Would bypassing the modulator by using an SVGA monitor via scan doubler overcome this problem? I would be grateful if you could provide me with any solutions other that buying an A1200.

*Adam J. Cooper*
*Cambridgeshire*

**If it all goes horribly wrong, an A600 motherboard is pretty cheap to pick up.**



*You can't adapt an A600 to AGA without replacing almost the entire motherboard circuit, because the A600 is a 16-bit computer and AGA computers use 32-bit transfers, also at twice the original speed. It's even less feasible to graft on the extra signals than it is to double the chip bandwidth. The 'AGA emulator' falls somewhere between a scam and a pipe dream, so I'm not surprised you have not got it working – with or without sound!*

*There's nothing to stop you towering an A600 but I'm not aware of any commercial kit. Perhaps eccentric readers can suggest a good way to do this. The A600 can drive an SVGA monitor in 30KHz VGA Productivity mode, but in a maximum of four colours from a palette of 64, rather than 256 from a palette of 16 million, so it's hardly comparable. The fixer will allow flicker free 25Hz updates in 724 by 576 pixel resolution, limited to 16 colours from 4,000. These A600 extreme resolutions also consume almost all the time for access to its slow 16-bit RAM, so they retard display updates to a crawl.*

*The colour alteration you describe sounds like an excessive level of green in the components mixed to make PAL composite video for your TV. Scan doublers bypass all the analogue parts of the display chain, so one should cure this problem, which could stem from a fault in the video output hybrid or the modulator.*

*If it is the modulator, or a tuning problem, try feeding unmodulated video from the phono socket on the back of the A600 directly into a video recorder with a corresponding socket. If the colour tint persists, you ought to be able to pick up a working A600 motherboard for about £10, and keep the rest of your system.*

## CONVERT TO JPEG

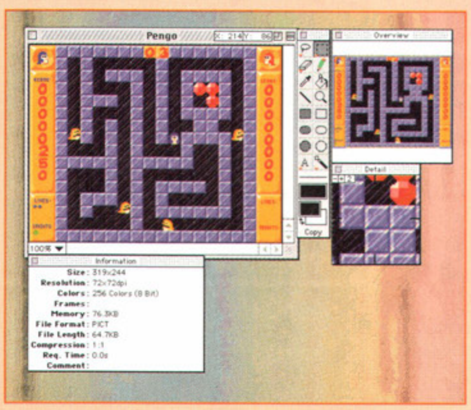
**In issues 128 and 129 you had letters asking for help on converting picture files from JPEG and GIF to the IFF format. My problem is the reverse of this. I am trying in vain to convert picture files to JPEG to send them via email to work on PCs. *Viewtek* doesn't seem to be able to do this, neither does *PPaint*. Am I going wrong somewhere, or do you know of any conversion program that could do the job for me? I seem to recall that many years ago you did a program on one of the disks called *Transition*. Would this work, and if so, where could I find this program?**

***Nicholas Rock***
***via email***

***PPaint uses no more than 256 colours internally and JPEG is a 24-bit colour format. Commercial programs with JPEG support include AdPro, ImageFX and Photogenics. Shareware options include ImageStudio, ImageEngineer, and others built on SuperView library.***

***Personally I never got Transition to do anything, despite many attempts, so now I use GfxCon from Aminet, which usually makes a good job of JPEG output, or the Mac shareware Graphic Converter, which works nicely under emulation but does not quite recognise the full IFF specification.***

***I've put a load of JPEG programs on the CD, including PPC programs, source code, and recent releases like JPEG_Box, written for just the application you mention. I'm sure you'll find something that fits the bill among that lot (AFCD49:InTheMag/Workbench/JPEG).***




**Under emulation, Graphic Converter is a good way to convert your pictures into JPEGS.**

## LAZARUS RETURNS

I have an A1200 with RAM expansion and CD-ROM drive, and recently bought an old two-disk game called *Tusker*. It was boxed and it had the manual and everything but when I boot up with the game disk in the drive the screen flashes red and it automatically reboots.

I loaded up Workbench and had a look at the disk. The disk was called Lazurus and didn't have anything on it and when I put in the second disk it had two checkblock errors and was an IBM 1.44M disk, which it shouldn't be. Could you please tell me why the disk was called Lazurus and why it

# Feedback

## BAD LOAD FILE HUNKS

**I read Glyn Astill's problem with 'Bad Load File Hunks'. I experienced a similar problem recently. I have an old coverdisk with a programme called *Typesmith* on it. All I was required to do was copy it direct from its coverdisk to where I wanted it on my hard drive. As you can guess it reported 'Bad Load File Hunk' when I tried to load it. Next I copied it from its disk to a different partition. Strangely this time it worked fine, but was not where I wanted it.**

**So I renamed the original copy then copied the working copy from the other partition. As before even the fresh copy reported the dreaded 'Bad Load File Hunk' message. I concluded there was now a problem with my partition so luckily as there were not a great many programs on it, I deleted the two *Typesmith* drawers and copied everything else onto my other main partition and reformatted the first one. Then I copied everything back.**

**However all the programmes now reported a 'Bad Load File Hunk' so I deleted them all from both partitions, reformatted the offending one again and with trepidation began the tedious business of restoring from backup disks, testing each as I went. Thankfully this worked okay.**

**Being a stubborn cuss I still wanted *Typesmith*, so I came up with a cunning plan. I inserted it and ran *DiskSalv* on it. I used *DiskSalv* to copy it where I originally had wanted it. *DiskSalv* did not report any disk errors but when I tried it this time it worked perfectly.**

**So if Glyn does not wish to mess about with 'max transfer rates', etc, I suggest he gets a copy of *DiskSalv* from one of your CDs and gives that magical restorer a try first. It could just save him a lot of frustration and grief.**

***Bill Power***
***via email***

***Thanks Bill – that's certainly worth a try, though I suspect you might be 'fixing' a different problem from that which I discussed in my answer. Max transfer errors and the sort of file corruption which DiskSalv can fix may both result in 'bad load file hunk' reports, so this is worth a try. It sounds as if you've tried a lot more options than a simple tweak in HDToolbox, so I'm glad to hear it worked for you and hope this advice may help others.***

## ALTERNATIVE SCAN

**I've my penniesworth of feedback to add to the query about scanners in *AF131*. About 12 months ago I purchased an Epson GT-5500, SCSI version, with which I am very pleased. I also purchased *ScanQuix* as the software and found a problem straight away. It will not work through a Surf Squirrel although a standard Squirrel is okay. I eventually bought a SCSI interface for the Blizzard.**

**But then I found I had the best scanning results by installing *ShapeShifter* and a Mac partition and installing the Epson software that came with the scanner. As this software is produced by Epson for their own product it is the perfect match. It will also run through the Surf Squirrel so, in my opinion, the *ScanQuix* problem must be *ScanQuix* and not the Surf Squirrel.**

**I purchased my scanner via a Mac retailer so that I had the Mac software. I cannot be sure that it would be included if it was bought via a PC dealer. I hope that this is of interest and help to someone.**

***Mr. A. Burge***
***Norfolk***

didn't work?

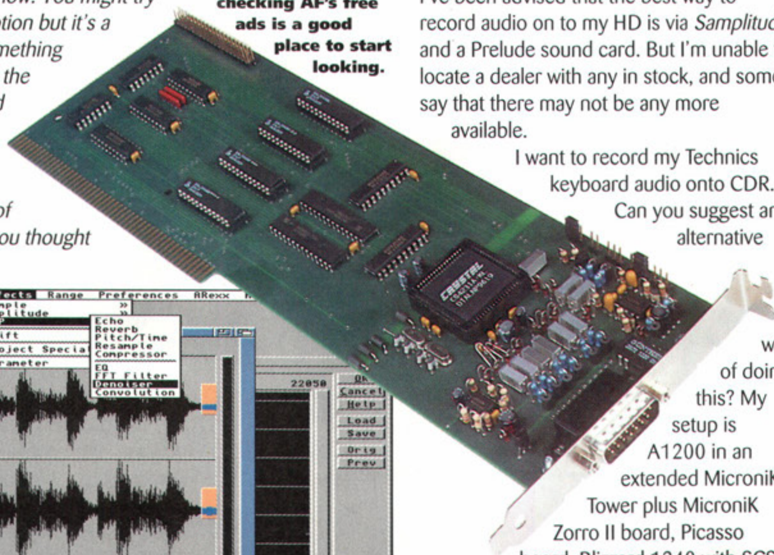
*Holo2*
*Australia*

*The first disk was called Lazarus because it had been 'repaired' by an obsolete program called DiskDoctor, originally shipped to developers, which later inveigled its way into the Workbench 1.3 release. According to the Bible, Lazarus was a character raised from the dead, and the name is a sign that DiskDoctor has tried to pull off the same trick.*

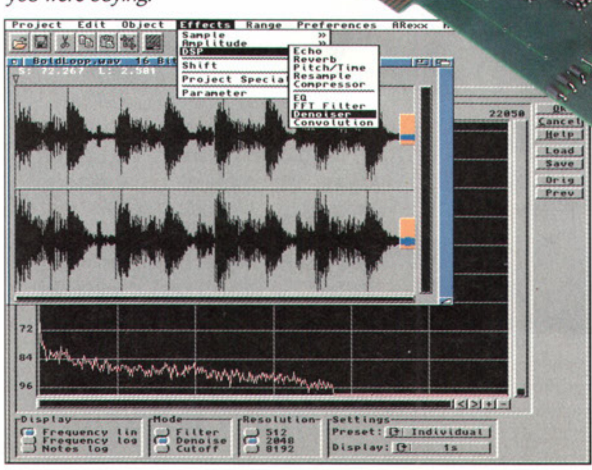
*DiskDoctor was always a last resort, prone to make things worse rather than better, and there's been no need for it since we got DiskSalv, AmiBack and QuarterBack Tools. Whatever was originally on that disk, it's gone now. You might try DiskSalv's 'Salvage' option but it's a long shot, because something went wrong to prompt the use of DiskDoctor, and then DiskDoctor itself may overwrite valid data, so there's precious little chance of recovering the game you thought you were buying.*

*The second disk was simply the wrong one for that game. Amiga games of that vintage were invariably shipped on 880K double-density media, and if you've got an HD disk it cannot be the original. The checksum errors suggest that it's not even a usable copy.*

*As ever with secondhand games, you run the risk of dud media, and this time you've been caught out. In your place, I'd approach the vendor for a refund. The other problem with secondhand disks is that they're often infected with viruses. If you are not running an up-to-date virus checker, you run the risk that your other disks will go the way of Tusker...*



**Preludes are a rare find now that production has slowed down but checking AF's free ads is a good place to start looking.**



## PRELUDE SHORTAGE

I've been advised that the best way to record audio on to my HD is via *Samplitude* and a Prelude sound card. But I'm unable to locate a dealer with any in stock, and some say that there may not be any more available.

I want to record my Technics keyboard audio onto CDR. Can you suggest an alternative way of doing this? My setup is A1200 in an extended MicroniK Tower plus MicroniK Zorro II board, Picasso board, Blizzard 1240 with SCSI, 40M RAM, two floppy drives, SCSI Zip drive, SCSI CD-ROM, SCSI CDR/W, Hypercom3, 56K external modem and MakeCD v3DAO, all working well together.

*John D Bird*
*Bromley*

*Marc Albrecht of A.C.T. explains that since a deal with Amiga Inc fell through last summer they've only been working part-time, but "we are currently trying to fulfil existing orders (also from English resellers) – but since my spare time is very limited I cannot and will not give any time estimates." Meanwhile Preludes are scarce, as you've noted, but they do pop up secondhand at times, in Amiga Format's Reader Ad section among other places.*

*In theory there are other sound cards but these tend to be made and sold in batches, like the Preludes, so they are not continuously available. You might settle for the A1200 clock port version if you can't get the Zorro card – it is about as good quality as most rival 16-bit Zorro cards, although not quite as clean or fast as the Zorro II version of Prelude.*

*The rest of your system should give you enough slack for effective multi-track recording despite the clock port bottleneck, as the RAM and SCSI are local to the processor, and that's important as Samplitude is a demanding real-time application. I suggest you master audio to hard drive in CDDA or AIFF format, and write that to CD later with MakeCD.*

## MORE POWER

I have been thinking about upgrading my Amiga 1200 once again. Although I have a 68060 and 240MHz PPC, BlizzardVision graphics card, 6.4G HD and 24-speed CD-ROM with the IDE Flyer. I was thinking about upgrading to the 400MHz Blizzard G4 with the CybervisionNG graphics card.

Would I notice anything different from my current setup? Is it worth the upgrade and the money? Would it run any PPC packages (games or applications) faster or better than on the 603 range of PPC boards?

Also, when I load up Workbench, why

**Continued overleaf ➡**

## BLIZZARD CD

**I have a desktop Amiga 1200, with a Blizzard 1230 IV accelerator. I have just bought the Blizzard SCSI kit IV, plus 64M RAM. Because I wanted to get online I bought a modem and CD-ROM/hard drive.**

**It is here the problem arises. The CD-ROM and hard drive are both SCSI and are in the same external casing, bought from Analogic Computers Ltd. The computer recognises the hard drive, but no matter what I try, I can't get the CD-ROM to work. With the SCSI kit came *AmiCDFS*, which I tried to follow, but I don't seem to have a scsi.device in the Devs directory.**

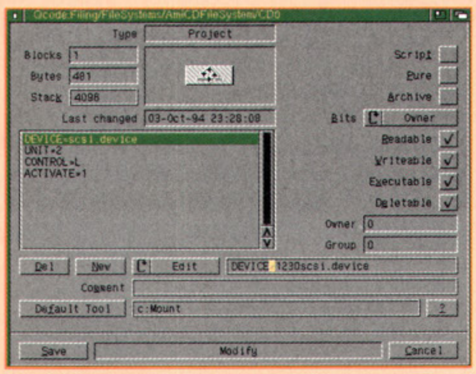
***Chris Daldorph***
***via email***

***The solution is explained in the manual supplied with the Blizzard A1230, though it's a shame the vendor did not configure AmiCDFS on your behalf. You need to tell that software the name of your SCSI interface driver. This is in ROM, not the DEVS directory – otherwise the system would not be able to boot from SCSI. SysInfo can list the devices currently in ROM or RAM.***

***To avoid a clash with the internal scsi.device, which actually controls the A1200 IDE port, phase 5 called the Blizzard SCSI '1230scsi.device'. You need to configure that name – exactly as presented here, without any capital letters – into the CD icon or mount file in Devs:DOSDrivers.***

***You also need to put the SCSI ID number of your CD drive in the same place. The easiest way to do this is by selecting Information for the CD0: icon, and editing the line which specifies the device, adding 1230. Change the unit number (which defaults to 2) on the next line, and save the changes back to Devs/DOSDrivers. You can edit the text in the CD0 mount file corresponding to CD0.info, but the icon tool types are easier to alter and take priority over information in the text file.***

***If you had the unedited CD icon in DOSDrivers when you turned on the Amiga you'll need to reboot the system to replace the faulty setup with one that refers to the right device and unit. Make sure that the file AmiCDFileSystem has been copied to the L: directory – this is the first instruction in the guide to installing AmiCDFS.***




**Add 1230 to scsi.device to divert your CDFS from Commodore to Blizzard SCSI.**

does MCX say I only have 68M of RAM in total? I have 64M of Fast RAM, 2M of Chip and 8M graphics memory, so why does it only count 68? Am I right in thinking that they are planning to release the source code of *Quake* so that it can be ported to the PPC? Are emulators like Fusion, PCX and AmiGenerator actually using the PPC? Without it, they are rather slow.

***Phillip Reed***
***via email***

*It's too early to say whether you should upgrade your existing setup, as the G4 Amigas have not even been demonstrated yet, let alone shipped to customers, and phase 5 have a long history of shipping products late. The G4 processor is substantially faster than the 603e, especially on programs whose data will not fit immediately into the 603's on-chip caches, but the extent of the boost will depend on the memory architecture phase 5 build around the G4 chip.*

*You are sure to notice some differences because the 68K processor will be emulated, rather than implemented in silicon. This will speed up communication between the emulated Classic Amiga applications and the new PPC ones, but probably means that old programs will run slower, especially as you already have a 68060 for those. Compatibility is impossible to judge till the emulator is released, but rumours suggest that that's a major reason for the delayed release of pure PPC Amigas.*

*Workbench 3.5 only lists memory that can be used for programs. Chip RAM can be used for graphics, sound or program code. Fast memory is only available for code and data. The graphics card memory could, in theory, be added to the system memory list but isn't because it would be slower than real 'Fast RAM' and no longer available for graphics. A hack exits to do this for Picasso 2 and other graphics cards, but the resultant memory is hardly useful as it runs at only half the speed of dedicated Zorro II RAM expansion.*

*Workbench doesn't list the buffer memory on SCSI or IDE drives either, as it is only indirectly accessible to your system, and dedicated to the device; again, you can't run programs from there. The display shows free space in the 'public memory pool', and graphics card memory does not normally appear in that total.*

*A PPC Fusion is predictably 'delayed' but Blittersoft and Utilities Unlimited continue to promise it, despite disappointing take-up of their prepayment scheme. PPC versions of PCX or PC Task have been mooted, though with no timescale. An AmiGenerator remix seems more likely, as the source is freely available and PD console emulators are common ports in the PPC software roster. The PPC version of Quake on the net is an unlicensed hack and clickBOOM have resisted pressure to endorse or develop it.*




**The Viewsonic is a multisync monitor. To find out if it's the best one for you turn to our review on p.48.**

## A1200 PLUS

If I get an A1200, tower it and go for a Zorro card adaptor and 68060/50 accelerator, what's the most useful thing to plug into the clock port? With all this talk of graphic cards being the biz, flicker fixers, scan doublers and all, I can plug a multisync monitor directly into my SX32 and it works! Do I have something that other Amiga users don't have?

***Richy Watford***

*If you get a Z4 motherboard, you'll have four clock ports to play with. But they will all be half the speed, at best – and twice as costly in CPU load – compared with Zorro II cards, and harder to configure. Prelude 1200, Silver Surfer and rivals work well at the price, but Prelude only fits the first Z4 clock-port socket and others need special drivers for alternate ports. You might prefer a CatWeasel, or Gold Surfer; Zorro cards deliver similar functionality more efficiently, but less cheaply.*

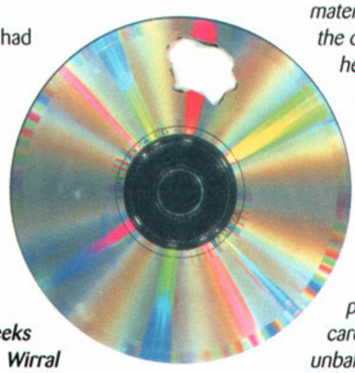
*All these give you more of the same, boosting motherboard features like serial transfers, audio or disk access to higher standards. Which is 'best' depends on what you do now, and what you would like to do with your Amiga. There's no chance of plugging a graphics card into the clock port, because it's only 16 bytes wide.*

*What you and I have, and many of the others don't, is a genuine multiscan monitor, assuming you can use all the modes in Devs/Storage. You also have Kickstart 3.1, with better monitor support than the commonplace Kick 3.0. I use Commodore 1960 and CMV123NE monitors, which are old and on the small side but stable at any scan rate from 15 to 40kHz. PC 'multisyncs' are incompatible with video, starting around 30kHz, as ECS and AGA Amiga modes peter out, but they are cheap enough to create a booming market for flicker fixers and scan doublers that push TV-format Amiga video to PC rates.*

## CD REPAIRS

I bought an old magazine CD which had a price label stuck to it. That started to come off the other day so I peeled it off, but this took off some of the silver CD label as well and now the CD won't work. I tried some sticky foil to patch up the bit which was missing but it kept coming up with read errors. If I relabel it can I get it to work again?

*Darren Meeks*
*Wirral*



**It could be worth painting over any damage first before committing your CDs to silicon heaven.**

*You may be able to recover some of the data, but probably not everything on the disc. Sticky foil is not a good idea because it can come loose, like that misplaced price label, and will unbalance the CD, making it harder for the drive mechanism to track the data and increasing the wear on the motor bearings. That will contribute to noise, erratic operation and eventually lead to drive failure.*

*Former Commodore UK boss David Pleasance later touted CD repair cream. This worked by smoothing out scratches on the underside of a CD, filling them with material with the same refractive index as the original disk. Unfortunately it won't help when the problem is on the top, label side of the disk, which needs to be opaque to stop stray beams bouncing around inside the drive and interfering with the data.*

*I managed to recover most but not all of a CD with damage on the label side by painting over the gaps with reflective silver from a 'metallic' pen, as sold in some stationers and card shops. This is less likely to unbalance the disc or come unstuck, but it's not a 100 per cent solution. Given the number of cover CDs made and their low price, you might be better off advertising for another copy, or recovering what you can and looking for the rest on Aminet, FTP sites or other CDs.*

## MONITOR BEAMS

I've got some problems with my monitor. I have CyberVision 64/3D with *CyberGraphX 4* and a Leoptics 17cp monitor. I have configured the GGXMode preferences for my card, with bandwidth 100 (as in the manual), horizontal frequency 30-70kHz, vertical frequency 47-100Hz and maximum resolution 1280 by 1024. However, I don't know how to configure the horizontal and vertical synchronization, minimum time and the minimum pulse.

Is there anything else that I have to configure besides? It looks nice in 800 by 600 pixel resolution, but when I go higher a rather strange red colour appears on the left of the screen.

*Krister S. Skrtic*
*Sweden*

*I doubt if the sync pulse timing will make any difference to the problems you describe, but you might try increasing them from their defaults in case it eliminates the red tint. Most monitors latch these pulses internally, so this duration is irrelevant; extending them just delays the video line.*

*The fact that the display goes wrong at the left edge suggests that the initial timing of the video signal is awry – probably too early – though it could be that the lines are so long that the beam is being reflected inside the tube. If the monitor lets you adjust the horizontal position of the picture, you could shift it to eliminate such beam-bounce, though you'll have to reposition other modes to compensate. The basic problem with PC monitor set-up is that there are many options and interactions.*

*It's hard to be specific about particular monitors. You simply have to play with the settings because there are no absolute standards for display timing. The results depend on the internal trimming and components inside the monitor, as well as the data format your graphics card supplies. The specifications you quote sound right as far as they go, borne out by normal working in modes up to 800 by 600 pixels, but beyond that experimentation is essential, unless you buy a model which is already explicitly supported.*

*You might try Picasso96 and see if its presets come closer to the expectations of your monitor. If this works, copy the settings from the Picasso96 setup software to CGXMode. If the picture 'collapses' suddenly, or the monitor starts to whistle, press Esc to return to the Workbench screen, and there's little chance that you'll damage the monitor. The danger comes if you leave a monitor running when the beam is not scanning properly, as the misaligned current flow might overload the power supply.*

## A600 QUAD IDE

I've got an A600, 40 MHz 68030 and 68882, 2M Chip and 8M Fast RAM. I'm wondering if it's possible to run both a Toshiba 2.5" 250M hard disk and a CD-ROM drive on the motherboard IDE, or will the cable end up too long? In that case, will an A1200 four-way adaptor work on the A600? After all, they have the same motherboard IDE.

*Paul Maric*
*Norway*

*I've emailed both Power Computing and Eyetech about this, but neither replied, so I contacted Jens Schönfeld who designed the four port buffered interface that Eyetech and others sell. He says "it works on my two test-machines, but it doesn't on a friend's A600. Strange behaviour, no idea where to look for the fault. Just try!"*

*The IDE on an A600 is logically but not electrically identical to an A1200 – the older Gayle controller and 16-bit bus mean timing and loading differ between the models and between machines. A fully-buffered interface can drive cables up to half a metre long, but the shorter, the better. Many 2.5" drives do not support a 'slave' on the same cable, but if your Toshiba can be configured as 'Master, slave present' you may be able to wire the CD-ROM on the same port; in the absence of buffers, a short cable is even more important.*

Simon Goodwin

## DRIVE SETUP

**I have a problem with my A1200 and 260M hard drive, external floppy, Apollo 68040/40MHz 32M Fast RAM. When I switch on the 200W power supply the "insert floppy" animation screen comes on instead of Workbench. This happens about two out of three times. I have tried cutting the first cable of the hard drive ribbon but to no effect. Any suggestions?**

**Also, when fitting a second external floppy into a tower case, is there an adaptor I can buy that fits the external lead and the DF0: floppy ribbon to the motherboard? I know you covered this problem in *AF129* but you didn't mention how to connect both drives at once to the motherboard.**

***Andy Hopkins***
***Dudley***

***You have a slow hard drive which does not spin up fast enough. Kickstart 3.0 allows about 10 seconds, then gets bored, which is why you get the animation asking for a disk in DF0:. Commodore found some drives could not respond that quickly, so they increased the wait in the Kickstart 3.1 ROM. This annoys people who have upgraded from IDE to SCSI, but it is designed to fix exactly the problem you've found. There are many other improvements in the later Kickstart, not least compatibility with Workbench 3.5.***

***Alternatively you could try your luck with another drive. This may work out cheaper – I bought a 2.5" drive bigger than yours for £12 at Computer Exchange in Central Birmingham last week, and it spins up fast enough for the old Kickstart.***

***Disconnecting pin 1 of the cable fixes problems with some PC drives that interpret the 'reset' signal on that line back-to-front, but won't make it spin up any faster. The Amiga doesn't require that line so there's no need to reconnect it.***

***The A1200 only contains motor-control and Drive ID logic for one drive on the motherboard connector, unlike big box Amigas which directly support two internal drives. Consequently you need to connect extra floppies to the 'external' floppy connector, even if they're actually inside a tower. They also need the decoding logic for each additional drive, so you can't use a spare 'internal' drive on an A1200 without extra circuits, as on Kylwalda. The simplest option is to retain the external drive and loop the cable back into your Amiga.***

## GOT A QUERY?

**Make sure you submit them correctly:**

- **Send your emails to amformat@futurenet.co.uk with the subject "Workbench".**
- **Send letters to the usual *AF* address and make sure you put "Workbench" on the envelope.**
- **Include details about your machine, such as what processor and how much RAM it has.**
- **Do your best to describe your problem succinctly.**
- **Make sure it wouldn't be easier to contact the dealer you bought the item from and ask them.**
- **Be concise!**

# Amiga.net

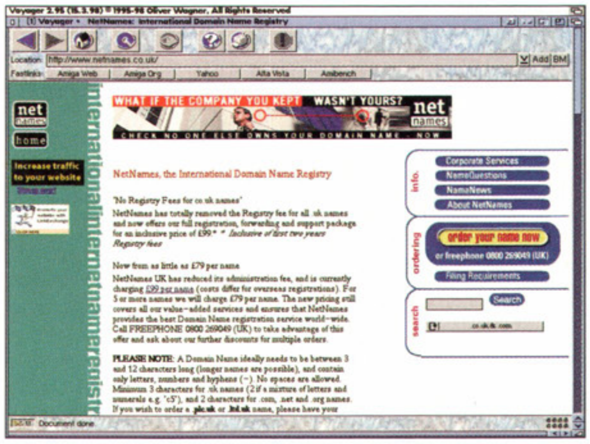
## How to win at the ever-popular domain name game

Years ago, if you had a website that offered something worthwhile to visitors, that was enough; popularity was about word of mouth so it didn't matter whether a site had an easy-to-remember URL. Back then, Yahoo! was located at http://akebono.stanford.edu/yahoo/ and the average website address involved more slashes than a Samurai film. When Yahoo! moved to www.yahoo.com on machines at Netscape's headquarters almost five years ago, "dot-com" domains were probably still outnumbered by pages with lengthy URLs hosted on .edu and .net sites.

### FORGET-ME-NOT

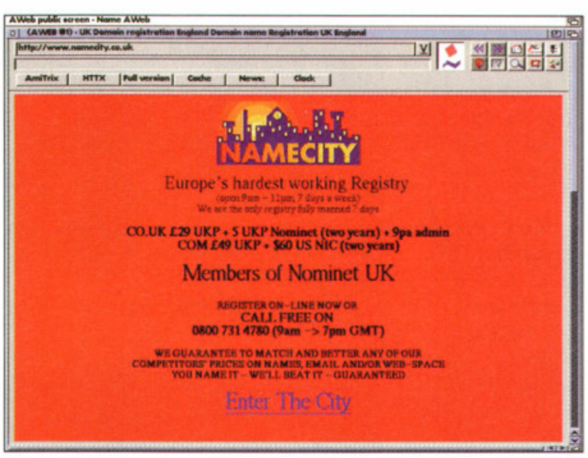
These days every website worth its salt has a catchy URL, and there's a lot of kudos attached to having a domain name that's short, snappy and easy to remember. If you run your own website, whether it's a business or a hobby, these days it pays to have a nice URL. Particularly for businesses, creating a good impression can be very important, and having a decent domain name can really help in that respect. About three years ago I received an email from an American chap called Don Cusick, who'd enterprisingly registered the cusick.com domain name and was wondering if I fancied paying him a fee to use the email address dave@cusick.com as a forwarding address. This basically would have meant any mail sent to dave@cusick.com would have been automatically forwarded to dave@dcus.demon.co.uk, my main email address. I declined Don's offer, but started investigating just how expensive it would be to register my own domain name. The answer, at the time, was prohibitive. On the Internet though, things move quickly. By last year prices had fallen drastically, so I eagerly snapped up cusick.co.uk for a paltry £50, including two years of email and website redirection. Sometimes it's handy to have quite an uncommon surname, because had I been a Jones I'd have been several years too late in trying to register my surname as a .co.uk domain name. Indeed, if you want to register your own domain name, the first thing to do is to see if anybody has beaten you to it. Plenty of sites offer you the chance to perform a domain name search, not least the sites which will offer to register a domain name for you in return for a fee. If the domain name you want has gone, then you can keep on trying similar domain names until you find one which hasn't been taken. In general you're more likely to find .co.uk domain names vacant than .com names. That's simply because .com is such a popular top-level domain (TLD) name in the United States – which is still the home of the majority of Internet users.

**Every website worth its salt has a catchy URL and there's a lot of kudos attached to having a domain name that's snappy and easy to remember**




**NetNames is one of many UK companies who'll register a domain name for you.**

**Giving your site its own domain name lends it an extra touch of professionalism.**




**If you shop around you can find some very keen prices.**

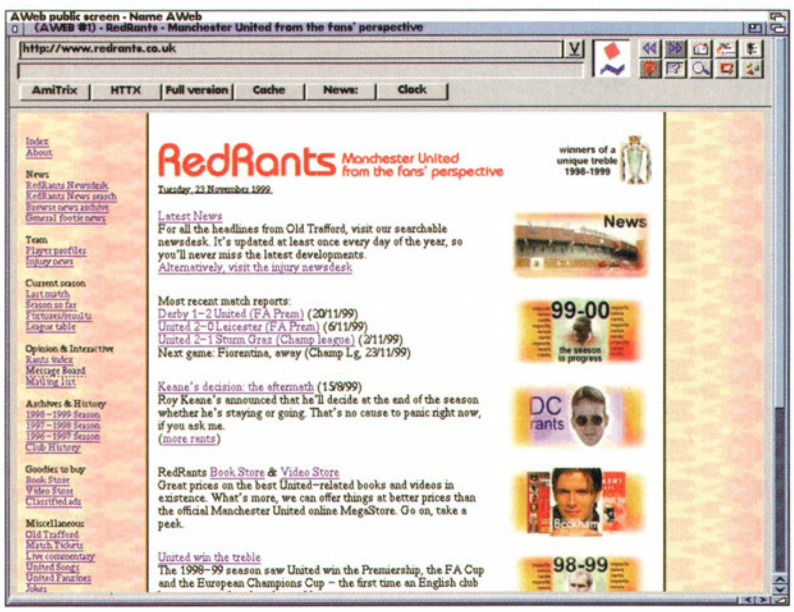
### CONTACT POINT

**You can contact me with your comments, questions and suggestions at dave@cusick.co.uk or through my website at http://www.cusick.co.uk.**

### LEGALITY

It's worth stressing at this point that domain name squatting – the practice of registering the name of a large company in the hope of being able to hold that company to ransom for the right to use that domain name in the future – is a bad idea. Squatting is on the verge of being made illegal in the United States and, unless you have a valid reason for registering a domain name that a large business might want (such as for instance your own business in a different market sector, trading under the same name), then you may find yourself in legal trouble.

Once you've found a domain name you



## WEBSITE REDIRECTION

Website redirection is a particularly useful thing to have if your website is hosted on your ISP's server. It's far classier to have www.yourname.co.uk as the URL for your website – whether it's a personal or a business site – than www.yourname.freeserve.co.uk, or worse still, www.yourisp.co.uk/homepages/yourname. Actually, the term "redirection" isn't generally accurate; in most cases, the company which you pay for the redirection sets up a single HTML page at www.yourname.co.uk that loads your real website in a frame that fills the whole window. The advantage of this approach is that www.yourname.co.uk will still be displayed in the browser location bar of visitors to your site once they arrive at your real index page. The disadvantage, of course, is that it will remain in the browser location bar until the user visits a page which bursts out of the frame which, in fact, they may not know they are inside. If your primary motivation for having registered www.yourname.co.uk was to get people quickly and easily to your site, and once they're there you no longer need to have www.yourname.co.uk displayed in the location bar, then you can burst visitors out of the frames yourself. To this just include the following piece of JavaScript between the <head> </head> tags on your site index page:

```
<script language= "JavaScript"> <!—Break out of
frames if (top.frames.length!=0)
top.location=self.document.location; //—>
</script>
```

You should also remember that website redirection only works as long as people enter www.yourname.co.uk and not, for instance, www.yourname.co.uk/pagename.html or www.yourname.co.uk/stuff/page.html. This is because the only page which exists on the server to which www.yourname.co.uk initially points will be one called index.html, which just loads your real site index in a frame. If you want to be able to dish out URLs of the form www.yourname.co.uk/pagename.html, you'll need to set up a proper virtual web server.

like the sound of, the next step is to decide whether you simply want email and website forwarding, or whether a full-blown virtual server is what you really need. Email and website forwarding is the cheaper of the two options, and if you're happy using the web space you already have (probably provided by your ISP) then it's the way to go. Furthermore, with a lot of forwarding solutions, there will only be a small charge, if any, should you decide to change your ISP and therefore need to change the email and website addresses to which your domain name redirects.

### VIRTUAL SERVERS

Alternatively you could opt for a virtual server package. Here you can have your domain name registered, with the domain name pointing directly at a large chunk of web space on a UNIX server. The web space will come with full CGI-bin access – ideal for adventurous webmasters – and a host of POP3 mailboxes of the form user@yourname.co.uk, which you can access easily by entering a few simple details into your email program. A virtual server is ideal if you need plenty of web space, don't want your ISP hassling you about the bandwidth your website is using, or think you might be changing ISPs in the near future and don't want this to involve any more hassle than changing your dial-up access settings on your Amiga. A virtual server also lets visitors access pages in the format: www.yourname.co.uk/stuff/page.html, which website forwarding won't. In other words, with a virtual server you can include directories and individual pages in the URLs you give out, safe in the knowledge that they'll actually work when somebody types them in.

Whenever you register a domain name, whether it's as part of a forwarding package or part of a deal on a virtual server, you should make sure that the company you are registering it with won't charge you an extortionate amount should you decide to change the server that the domain name points to. If you're registering a .co.uk domain name, you can actually do it yourself directly through Nominet, the body which oversees the allocation of .co.uk domain names. However, you are better off going through a company which is a paid-up member of Nominet, because it's cheaper to do things this way. For instance, you can now get .co.uk domain name registration plus email and web forwarding for £30 for two years through some Nominet member companies.

**Dave Cusick**

## USEFUL WEBSITES

**URLs Nominet** http://www.nic.uk
**NetNames** http://www.netnames.co.uk
**NameCity** http://www.namecity.co.uk
**TheName** http://www.thename.co.uk
**WebFusion** http://www.webfusion.co.uk
**The Web Site Hosting Company** http://www.websitehost.co.uk




**If you're curious as to the availability of a particular domain name, there are plenty of sites online that let you check whether it's already been registered.**




**Even the hordes of newbies pouring onto the web through the Freeserve portal are now being encouraged to register their own domain names – notice the search box in the lower left corner.**

Creative

**Due to the strange temporal phenomenon that is publishing schedules, I'm sitting here typing this at the tail end of the year 1999. By the time you read this, it will probably be the middle of January, 2000.**

**I've still got a million and one things to get done before Christmas, while for you Christmas will simply be a rather dim and distant memory. But, with any luck, I might even survive this issue without my brain imploding under super-stress.**

**Now that the long winter nights are well and truly here, the best thing that you can do in the bleakness of January is stay warm in-doors with your Amiga and a copy the *AF* Creative Section which starts, this issue, with another one of our ever-popular Complete Beginners Guides.**

**The saga continues by turning its attention to *Directory Opus*. Ben Vost, the self-confessed *DOpus* guru, leads the novice gently through some of this Workbench replacement's more confusing aspects and begins to unlock some of its more powerful features.**

**Richard Drummond**

CREATIVE INDEX



# The complete beginners guide to... DOpus

On the CD: -In_the_Mag-/CB_DOpus

## The most popular WB replacement isn't necessarily the easiest to get going...

Welcome to another in our series of Complete Beginners guides. Do bear in mind that these are topics we've been asked many questions on, or that have been specifically requested by a number of people, so do speak up if there's one you'd like to see happen in a future issue of *Amiga Format*. This issue we're

> **The first thing you notice if you've just installed DOpus is how ugly the default settings are but you can always spend time prettifying it**

concentrating on that bugbear/saviour of the Amiga – *Directory Opus*. To make things simpler, we'll only talk about the very latest version (5.82) which is known as *Directory Opus Magellan II* (with the OS3.5 update). We'll also only talk about *Directory Opus* in WBR, or WorkBench Replacement mode, after we tell you how to do it, of course.

So the first thing will be how to make sure that when you boot, you boot into *Directory Opus* (referred to simply as *DOpus* or *Opus* from now on). It's very simple to do. You can either use the installer script option, or you can very easily just rename your LoadWB command in C: to LoadWB_old, or something similar, and copy across the LoadDB command from your *DOpus*' C directory, renaming it to LoadWB in the process. Once this is done,



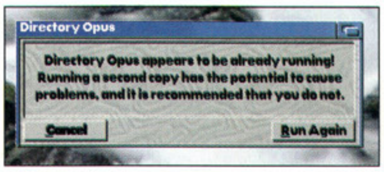
**TOP TIP**

**Changing your "LoadWB" line the s:startup-sequence to "LoadWB QUIET" will stop the progress bar from appearing as *Opus* loads.**




**My DOpus screen. The backdrops change every time I boot, and notice the lack of huge button bars – there's only the one in the bottom right corner and the start menu at the top right.**

when you reboot your machine you'll be in *Directory Opus* by default – you won't need to run it again (in fact, if you try to, *DOpus* should pop up a warning message suggesting that it isn't a great idea.)




**There's no longer much point running more than one copy of Opus at a time.**

The first thing you notice if you've just installed *DOpus* is how ugly the default settings are, so there is some work ahead of you when it comes to prettifying the program. However, most of that work is what is termed 'superfluous glitz' in the *DOpus* world, so can be skipped over quite readily, although I know most Amiga owners are keen on having good looking machines…



## TOP TIP

**If you set the ENV: variable "Return_of_Benify" to 1 and drag an icon from within a lister onto the desktop, it will automatically be "left out", so you only need to snapshot it.**

While the default layout for *DOpus* is actually set for a High Res (non interlaced), it really could do with more space to work in. If you don't have a graphics card and you can't put up with an interlaced screen, the best option would be to use an autoscroll screenmode. Your Amiga should happily be able to give you more than double the width and height of your standard screen, merely by upping the values in the Screenmode prefs and turning on autoscroll before hitting save. Actually, one of the major questions that we answer about *DOpus* is why the *DOpus* screen will appear in addition to a completely blank Workbench screen. The answer is that to change *DOpus*' screenmode, don't use the Environment settings – use the Workbench Screenmode prefs, and make sure that *DOpus* is always set to open on the Workbench screen.

## USER ACTIONS

**User Actions have got to be the most misunderstood and badly explained feature of *Directory Opus* since its inception. In older versions of *DOpus* you were only allowed a maximum of four, but the current version allows up to 10 user actions for a particular filetype, but so what? There's no point in having a huge number of them if you don't know what they do, what they are for. In short, User Actions are a godsend that allows you even more freedom and the ability to do a huge amount of things from one button alone.**

**It's easiest to explain User Actions with a couple of examples. Take your bog standard IFF ILBM picture and your standard ASCII text file. There aren't too many applications that will display both just as easily, and not only that but display it as you want. Obviously, you could use Multiview for both, but what about searching that text file, or having the next image cached? The way to do it is with User Actions. It's a good idea to have an idea of what you want to do with them before using them – I myself have always had User Action 1 as a display action and User Action 2 as an edit action. Now all you need do is duplicate your double-click action for all your filetypes as the User Action 1. That's presuming you have your double-click action set to viewing the file and want to have that as your User Action 1.**

**Now, create a button that just performs User Action 1. Gather a bunch of different files of different types in one place, select 'em and hit the User Action 1 button that you've made. You'll see that that one button will "view" all those different filetypes you've set up, with the viewer you want to use for that filetype. If you remember to copy and paste your double-click action for all your filetypes when you make them, this one button will be able to handle any filetype you have selected when you click on it.**

**Even more importantly, let's set up User Action 2 as an edit function. As an example edit the User Action 2 function for ASCII text to load the file in your favourite text editor. This isn't necessarily as easy for other filetypes and you may have to play around a bit with ARexx scripts or trial and error to get the effect you want, but then you'll be able to left-click that User Action button to view a file or right-click it to edit it. That's only two User Actions set up and you have a further eight! Get going…**



## TOP TIP

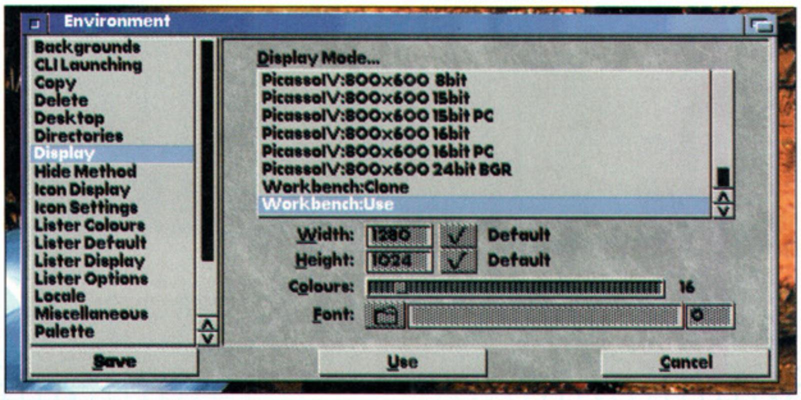
**There are more icons on the Amiga OS3.5 CD than you might imagine. Have a look in the OS3.5/icons drawer.**

*People often ask why the DOpus screen appears in addition to a blank Workbench screen, the answer to that is to change DOpus' screenmode*

**Using the Workbench screen will make sure you don't have a second, blank screen all the time.**

Next up is to configure your *Opus*. Most people used to *DOpus 4*'s way of doing things will revel in the fact that they are no longer restricted to a single button bank at the bottom of the screen and immediately set about creating a huge button bank, or importing their old settings from *Opus 4*. However, it's actually much easier to make use of the many other ways of launching an action, an application or a script. The lister has its own user menu and has a toolbar of gadgets just waiting for your favourites. By default, this already has the usual file operations like copy, move, delete, make directory and so on, so you can get rid of those from your main button bank. You'll find that it's actually much easier to use these lister buttons than to have to move around the screen rearranging windows to be able to get at your master bank, after a while anyway. Since you can also arrange several different actions for filetypes, having buttons devoted to specific file viewers also becomes a mite pointless since the files can be shown using these programs without resorting to user interfaces and the like. Soon you'll be using *DOpus* with very few additional, visible, button banks. Personally I have a grand total of four buttons visible on my Workbench screen and a start menu (which is more of a toy than anything). So by all means, import your *Opus 4* settings, but be prepared to start paring down once you have them.

**Continued overleaf ➡**





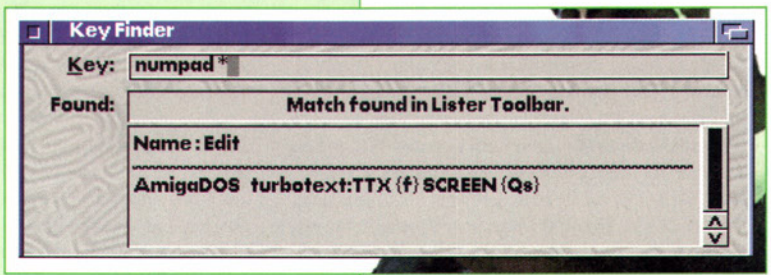


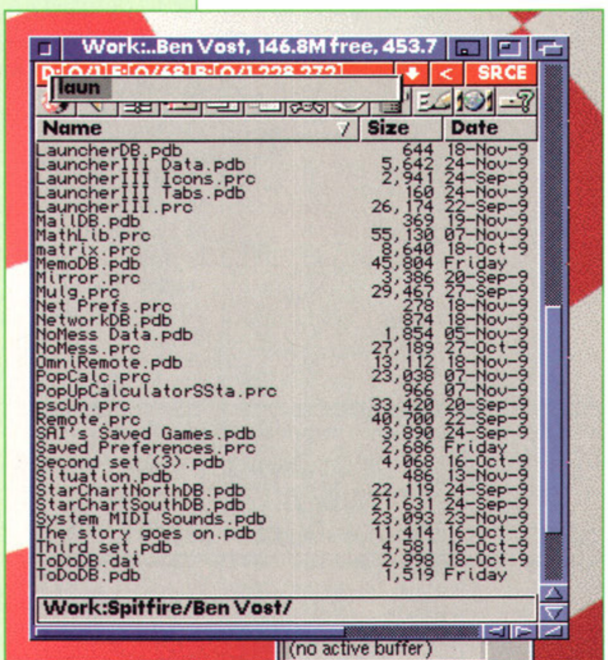
**Using a lister's toolbar for your favourite functions saves space and is always available close to your files.**

## KEYBOARD SHORTCUTS

For me, using the mouse and keyboard at the same time really increases my productivity, speeding up operations no end. However, I understand that some people are uncomfortable with memorising numerous keyboard shortcuts. Read on if you're interested in my suggestions for an ergonomic set of suggested keyboard shortcuts for *Directory Opus*, but feel free to move onto other parts of the tutorial...

Since *DOpus* is, at heart, a file manager, the operations you're most likely to engage in are copying, moving, deleting, making directories and renaming files, so you'll want those particular functions to be as quick to access as possible. Since *Opus* supports keyboard shortcuts both with and without modifier keys (like CTRL, ALT, SHIFT or the Amiga keys), I prefer to use single keys wherever possible. This does have the side effect of not being able to use the built-in *DOpus* select facility for any files that start with the same initial letter as your keyboard shortcuts, but you can always put in a spurious character, delete it and type the name you want. It's a bit difficult to explain in text, but open a lister and hit a key you haven't got associated with a shortcut and you'll see what I mean. Don't forget that *Opus* will let you make new shortcuts using keys that have already been used. If you want to check before you go ahead, the key finder in the *Opus* menu will tell you if the key you want to use is already taken.



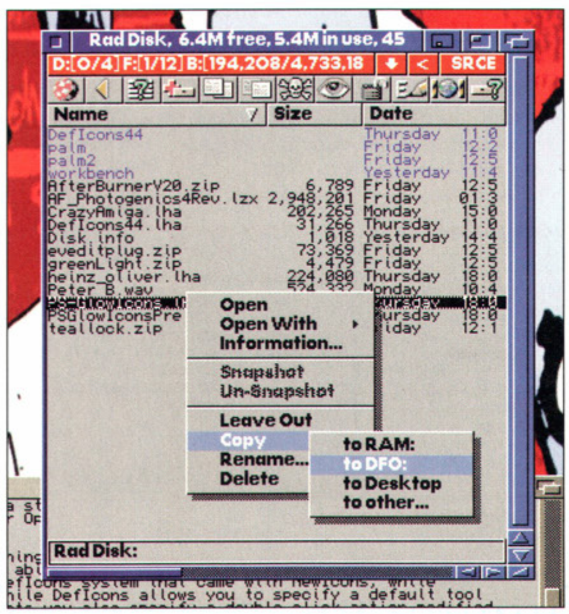

Above: the Key Finder helps you eliminate shortcut clashes. Right: typing in a lister gives you the select field.

My choices for shortcuts are as follows. I've tried to keep them as much in-line with other shortcuts so there's not too much to remember:

| ACTION | SHORTCUT |
|---|---|
| copy | c |
| move | v |
| delete | DEL |
| rename | RAmiga-r |
| makedir (you can't use RAmiga-n since *Opus* uses that to open a newlister) | n |
| make lzx | l |
| Close window (I'm so used to using Command-w on the Mac for closing windows that I now use the same shortcut on my Amiga and RAmiga-w is too far to reach with one hand) | LAmiga-w |
| lister to open a lister for a particular device I tend to use the numeric keypad keys – for me to open a list for RAD: I use numpad-. | |

### TOP TIP
Holding down shift and alt when dragging an icon will allow you to simply replace the imagery of another icon by dropping the first icon on it.

One of the most important things that *Opus* can do for you is recognise filetypes. You can use this ability in conjunction with icons you like in order to completely replace the DefIcons system that came with NewIcons, while achieving better results. While DefIcons allows you to specify a default tool for a filetype, only *Opus* lets you also specify a double-click action modified by CTRL or ALT, dragging and dropping (with or without modifiers and up to 10 user actions, more on that later). Last but not least, in




Files can have a right mouse button menu item added to them.

### TOP TIP
In the Scripts settings, put "c:loadWB_old SKIP" in the shutdown item. This will allow you to quit *DOpus* and go back to Workbench if you need to.

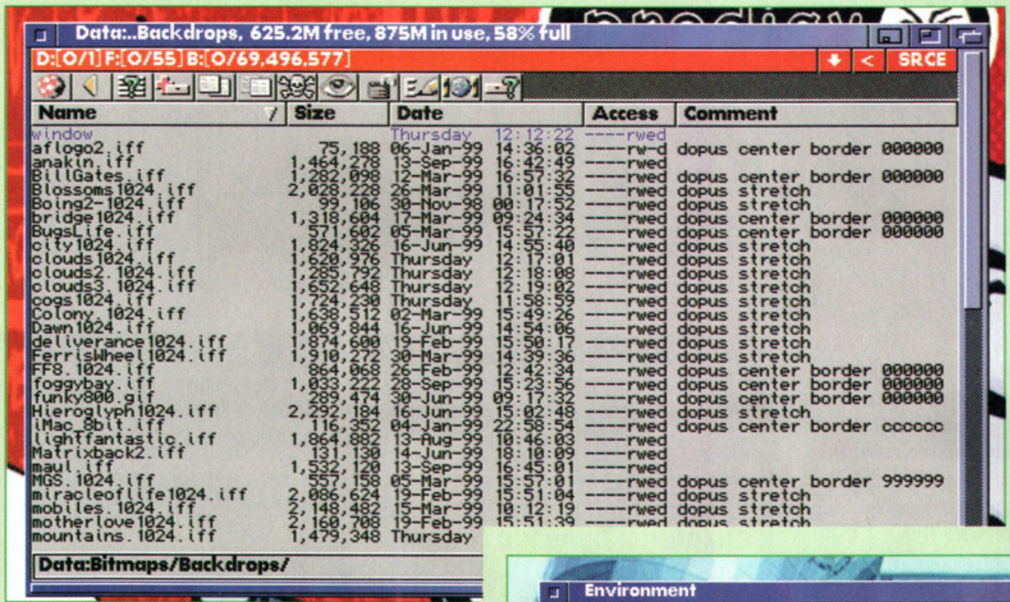
addition to having a default icon for a specific filetype, you can also have a menu which will appear when you hold down the right mouse button when the mouse is over the file.

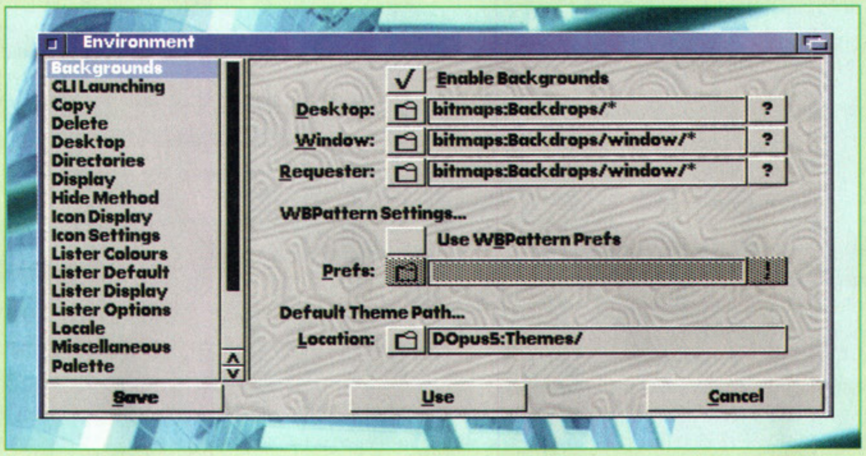
*DOpus* actually comes with quite a variety of filetypes, but your best bet, if you want to build up a big collection very quickly, is to use reader Richard Lane's *Magnum Opus* – an excellent collection of filetypes and more for the discerning Amiga user. You can get *Magnum Opus* from http://www.magnumopus.co.uk/ or also from our CD this issue.

Once you have filetyping and the look of your screen sorted out, you're pretty much done as far as basic operation of *Opus* is concerned. But there's always more. Don't forget that *DOpus* supports a great deal of drag and drop. Instead of going through the long-winded procedure of starting a new user menu and painstakingly creating each menu item by adding, editing and saving, you can simply drag a drawer full of programs into the menu editor, or drag individual programs

### TOP TIP
If you decide you don't like the choices of pictures, etc. you are given when you boot, you can bring up the Environment settings requester, turn off backgrounds, hit use, then go back in and turn them on again and hit use.

## BACKDROPS




**Having an Amiga is all about customisation, and pretty pictures livening up your Workbench is certainly one way to do it. If you want to specify exactly how your backdrop pictures appear using *DOpus*' facilities, you can click on the pop-up menu at the end of the file gadget in Environment setting, but this is only any good for one-off files, or all your random selections. What if you've got some files that should be tiled, others that should be stretched and more again that should just be centred with a nice blue border? The simple answer is: you can add file comments to them. Make sure they start with "dopus", but then you can put centre, stretch or tile and also include border (with a colour in six hex digits). The picture to the right will show you just what I mean (all the borders shown are black, with the exception of the iMac one which has cccccc – a very light grey, and the MGS one which has 999999 – a mid-grey).**

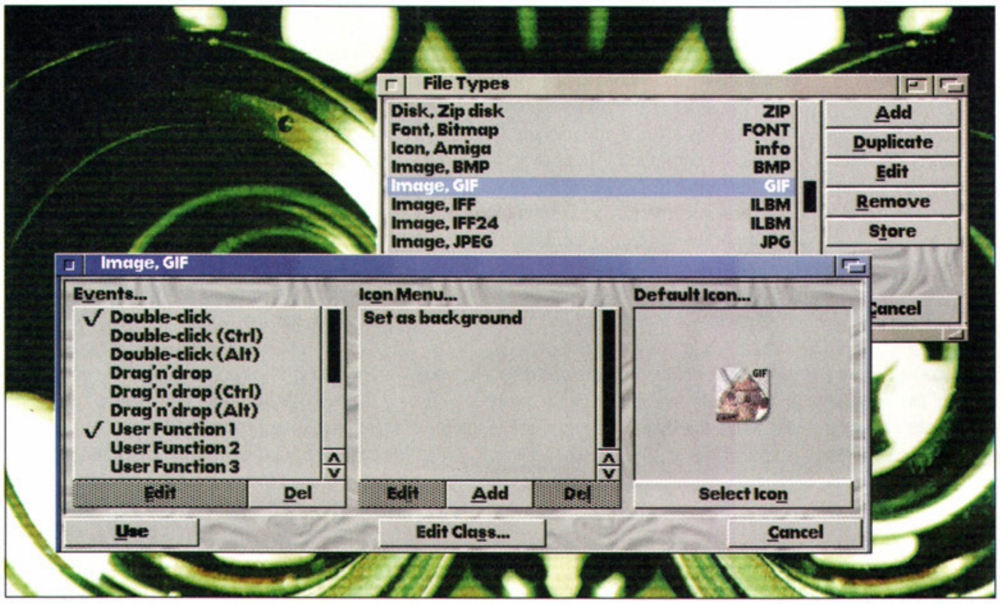
**If you would rather have random backdrops instead of one static one, then you can simply replace the filenames specified in the backdrops section of Environment settings with a wildcard. Make sure you have the path to your pictures correct, but then use #? or * rather than having a picture filename. Then, whenever you reboot, or make changes to your backdrop settings, you'll get a new pic for your backdrop, windows and *Opus* requesters. Nice.**

**Comments give you the backdrop style you want while wildcards ensure you have a good selection.**

into menus or sub-menus. Much easier.

The same applies to button banks of all descriptions. If you want to edit your lister toolbar, or your button bank, then simply hold down an alt key and click on a button. This will bring up the editor for that particular button and, by consequence, the editor for the whole button bank.

Hopefully, you will have picked up something from this, even if you aren't a complete beginner to *Opus*. Using *Opus* over the top of Workbench, even Workbench 3.5 gives your Amiga so much more power it almost makes it a different machine. However, because of its power, it can also be quite daunting to the new user. I hope that this will have helped with that situation somewhat.




**Make sure your filetypes have a User Function and an icon menu item enabled.**



### TOP TIP

**You can have a random startup sound when you boot up by specifying a wildcard (#? or *) instead of a filename in the file gadget for the startup Sound event in Environment settings.**

Although it's slightly out of date now since it only applies to 5.81 and not 5.82 and OS 3.5, there are more tutorials on the *DOpus Plus* CD if you're keen to know more.

Ben Vost



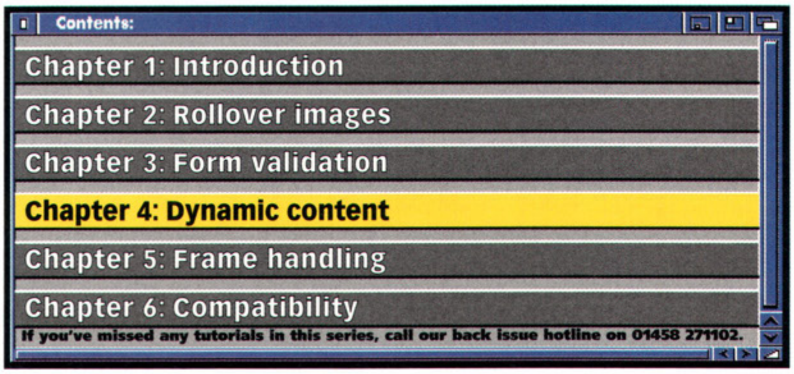
### TOP TIP

**If you want to copy a filename, select the file and hit RAmiga-c. This will put the file's name and path into the clipboard. If you just want the filename, hit RAmiga-shift-c.**

# Practical JavaScript

On the CD -In_the_Mag-/JavaScript

## With an abundance of browsers being used, you need to be sure that what your web visitor sees is what you want




**For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.**

This issue we will look at generating the content of HTML pages from JavaScript. This is not the same as Dynamic HTML, which is not handled by any of the current Amiga browsers. Dynamic HTML allows JavaScript to change the content and appearance of a page after it has been rendered by the browser. We will only consider the content of the page before the browser shows it, that is, at the time of writing the page to the browser window. We used `document.write()` to add a date to a page in part one, but it can do a lot more than that.

### GETTING BROWSER INFORMATION

PNG is a superior format to GIF for web images, with one exception: not all browsers support it. The situation has improved, the latest versions of *Netscape* and *Internet Explorer* will display PNG, but many people use older versions of software and are unable to upgrade. JavaScript provides a way to determine the browser being used, so we can create a page that uses the best images for a particular browser. The JavaScript object containing information about the browser is navigator (since JavaScript was originally written for the Netscape Navigator browser). Add this script to a page to show information on the browser displaying it.

**JavaScript provides a way to determine the browser being used so we can create a page that uses the best images for a particular browser**

```
    <script type="text/javascript"
language="JavaScript">¶
    <!--¶
    NavList = 'appCodeName appName appVersion
userAgent';¶
    NavArray = NavList.split(' ');¶
    document.write('<h3>Properties of the Navigator
object</h3>');¶
    document.write('<table>');¶
    for ( i = 0; i < NavArray.length; i++)¶
    {¶
        document.write('<tr><td><b>' + NavArray[i]
+ '</b></td><td>');¶
        eval('document.write(navigator.' +
NavArray[i] + ');');¶
        document.writeln('</td></tr>');¶
    }¶
    document.write('</table>');¶
    // -->¶
    </script>¶
```

The properties of the navigator object are:

| | |
|---|---|
| appCodeName | The code name of the browser |
| appName | The name of the browser |
| appVersion | The browser's version string |
| userAgent | The User-Agent string as sent by the browser in the headers of page requests |

We could have simply listed these with separate commands of the form `document.write(navigator.appName)`, but this way shows some more elements of JavaScript and comes in useful at the next stage. The first line of the script creates a string containing all the properties we want to cover, separated by spaces. The string object has a method called split. This splits the string into substrings and returns them as an array. It takes a single argument, the character on which to split the string, a space in this case. Now we can use the `for` loop (as discussed in part two) to perform the same operation on each element of the array. The initial `document.write` statements just set up an HTML table so the information is displayed clearly. The first line of the loop displays the property's name using a straightforward `document.write`, but showing its value is a little trickier.

The `eval()` method evaluates its argument as a string and executes it as a JavaScript command (ARexx programmers will recognise this as being the same as the Interpret statement). The first time around the loop, `NavArray[i]` contains "appCodeName", so eval executes "document.write(navigator.appCodeName);". The navigator object has two more properties, mimeTypes and plugins. These are arrays containing lists of the MIME types and plugins available to the browser. We can list these too by adding two more loops to the script, after the `</table>` line.

```
document.writeln('<p><b>Plugins</
b><p><ul>');¶
    for (i = 0; i <
navigator.plugins.length; i++)
document.writeln('<li>' +
navigator.plugins[i].name);¶
    document.writeln('</ul><p>');¶
    document.writeln('<p><b>Mime
Types</b><p><ul>');¶
    for (i = 0; i <
navigator.mimeTypes.length; i++)
document.writeln('<li>' +
navigator.mimeTypes[i].type);¶
    document.writeln('</ul><p>');¶
```

Here the use of arrays makes life much simpler, we simply loop through each array printing out the relevant value. In the case of the plugins array, this is the name property of each element. For mimeTypes it's the type property. It would be nicer if there was consistent naming here, but life's not supposed to be that simple.

### BROWSER-DEPENDENT IMAGE TYPES

Now that we can tell what the user's browser is, and can do, let's use this information in a page. Identifying whether a browser can use PNG images isn't as simple as checking the plugins list, since PNG decoding can be handled internally rather than by a plugin (or by datatypes in the case of Amiga browsers). Instead, we'll check the User Agent string for indications of a browser that supports PNG. There are two ways of handling multiple image types. The first is to have two copies of each page, say mypage.html with GIF images and mypage_png.html with PNG images. In this case, we put the browser check at the top of mypage.html, forcing the browser to load a different page if we recognise it as being able to handle PNG images. JavaScript is executed as it is loaded, so we put this near the top of the page, in the

<HEAD> section. Executing it as an `onLoad` event would mean that it wouldn't be run until the whole page had loaded, and many of the GIF images had started loading, making the saving of using the smaller PNG images pointless. This is the script to use in the <HEAD> of the document.

```
    <script type="text/javascript"
language="JavaScript">¶
        <!-¶
        TempA = location.href.split('.htm');¶
        TempA[0] = TempA[0] + '_png';¶
        NewURL = TempA.join('.htm');¶

        if (navigator.userAgent.indexOf('Amiga') >
-1) location.replace(NewURL);¶
        // ->¶
        </script>¶
```

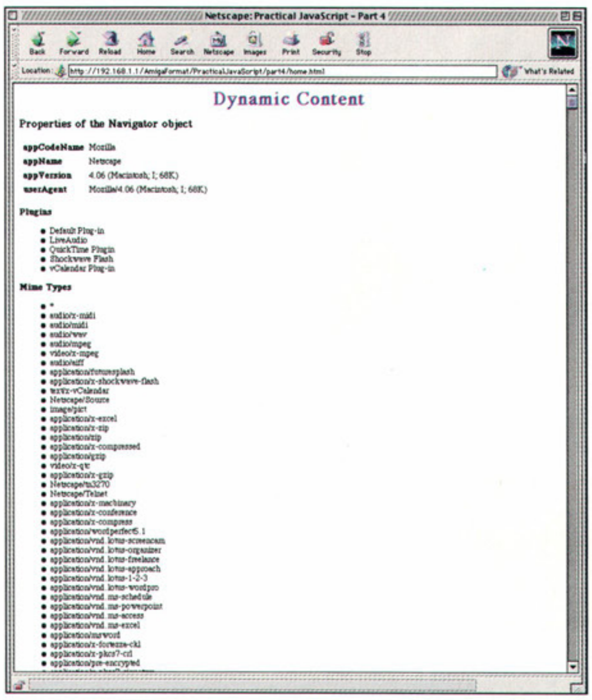
The first three lines generate the URL of the PNG version of the page. This means we can use the same function in every page, without needing to change URLs. The first line takes the URL of the current document, given by `location.href`, a property of the document, and splits it at the file extension. The next line adds the "`_png`" extension to the page name and the third replaces the rest of the URL using the `join()` method of the array. This is the counterpart of `split()`, it joins the array elements as a single string, using the argument as a separator.

The final line checks to see if the User Agent string contains the word Amiga, all JavaScript-capable Amiga browsers can handle PNG images, and uses `location.replace()` to load the new page in the place of the original. All of our browsers include the word "Amiga" in the userAgent string, even when spoofing as *Netscape* or *Internet Explorer*. This is the most reliable way to test for an Amiga browser, even an undercover one. It's not only Amiga browsers that can handle PNG, so we'll add some more checks.

```
    if (navigator.userAgent.indexOf('Mozilla/4') ==
0) location.replace(NewURL);¶
```

checks for version four of *Netscape*, which supports PNG. Then we check for version five of any browser with these lines:

```
Version = navigator.appVersion.split(' ');¶
if (Version[0] >= 5) location.replace(NewURL);¶
```




**Even with the large range of plugins reported by Netscape, there's no mention of PNG. That's why we need to check the version number.**

The `appVersion` property contains the version number followed by extra information. We use split to isolate the version number so that we may compare it with a number.

Since this is a general function, with no reference to the calling page's URL, we can speed up page loading slightly by moving it out of the page and into a separate file. Save it as a separate file, called LoadPNG.js and replace the function in the <HEAD> section of each page with:

```
    <script type="text/javascript"
language="JavaScript"
src="LoadPNG.js"></script>¶
```

The SRC attribute tells the browser to fetch the external file and execute it as if it were within the <SCRIPT> tag. Any code within the tag will be ignored, unless the browser doesn't recognise the SRC attribute (as with old versions of *Netscape*). The first page will take slightly longer to load since the server will have to fetch the external file, but then the file will be in your browser's cache so loading will be faster.

## ANOTHER WAY

The other way of handling this is to have only one page and use `document.write` to generate the actual <IMG...> tag, using either GIF or PNG images as appropriate. This results in a larger document. Each image needs a call to the function that decides what to include, and you need to include the normal <IMG> information in a <NOSCRIPT> tag for browsers that don't support JavaScript. It has the advantage that it only requires one copy of each page, but is probably only worth using if there are several other choices to be made within the page, such as whether to use Java, Shockwave, RealAudio, etc. This is how it would work. Each image is called with:

```
<script
type="text/javascript"><!-¶
ShowImage('images/image1',320,80,
'An image'); // ->¶
</script>¶
<noscript><img
src="images/image1.gif"
width="312" height="69" alt="An
image"></noscript>¶
```

The first three lines load the image via JavaScript, the fourth is for non-JavaScript browsers. The ShowImage function is as follows:

```
<script type="text/javascript"
language="JavaScript">¶
<!-¶
if
(navigator.userAgent.indexOf('Ami
ga') > -1)¶
{¶
    ImgExt = '.png';¶
}¶
{¶
    if
(navigator.userAgent.indexOf('Moz
illa/4') == 0)¶
    {¶
        ImgExt = '.png';¶
    }¶
    {¶
        Version =
navigator.appVersion.split(' ');¶
        if (Version[0] >= 5)¶
        {¶
                ImgExt =
'.png';¶
        }¶
        {¶
                ImgExt =
'.gif';¶
        }¶
    }¶
}¶

function
ShowImage(ImgName,ImgWidth,ImgHei
ght,ImgAlt,ImgAttr)¶
{¶
    document.write('<IMG SRC="' +
ImgName + ImgExt + '" WIDTH="'
+ ImgWidth + '" HEIGHT="' +
ImgHeight + '" ALT="' + ImgAlt +
'"');¶
    if (ImgAttr != null)
document.write(' ' + ImgAttr);¶
    document.write('>');¶
}¶
// ->¶
</script>¶
```

We only need to determine the browser type once, so we deal with that as the page loads. The nested `if` statements look complex, but that's only because there's no else keyword in JavaScript, it's implicit. The contents of the second set of braces are executed if the `if` condition is untrue.

```
    if (condition)¶
        {do this if true}¶
        {else do this}¶
```

The braces are not required if there is only a single statement for each of true and false, but their use is strongly recommended when using nested `if/else` tests, otherwise it's not always clear which `if` an `else` clause can refer to.

The function itself only writes the <IMG> tag, using the image extension appropriate to the browser. The ImgAttr argument is for things like ALIGN and BORDER attributes and is only written if the argument is defined. If the `(ImgAttr != null)` test were omitted, JavaScript would write "undefined" to the browser window whenever no value was given.

This is a complex way of dealing with multiple image formats, but is of more use when using other data formats. For example, you could put in a link to multimedia content only if the browser has the relevant plugin installed. Later on, we will look at using cookies to store user preferences, then this method can be used to generate customised pages, all without any need for server side CGI scripts.

**Neil Bothwick**

# Useful ARexx

This issue we're facing reality and helping you to come to terms with the fact that everything will always go wrong!

The trouble with writing programs is that they very rarely work properly. At least in my experience, as soon as an ARexx script gets over about 10 lines long and uses more than half a dozen variables, it's never going to work first time. If you complicate this by adding real-world data that has to be entered or deduced by the script from other sources, things get even more prone to spontaneous, erratic behaviour.

The most simple type of mistake is a syntax error, which is normally caused by typing too quickly, or not being too sure of the exact syntax of functions and commands. It's easy enough to do.

**For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.**

Contents:



**If you've missed any tutorials in this series, call our back issue hotline on 01458 271102.**

It might be, for example, that you type:

```
x= ABS(width*12)-(ABS(time/vector
+163) -256¶
```

This will be immediately flagged as an error by ARexx when you try to run the script. Did you spot the mistake? There are too few close brackets at the end of the line. This is easy enough to do when you are constructing such complicated lines of code, but also pretty easy for ARexx to spot and you to correct. However, imagine you typed something like this:

```
x= ABS(width*12)-(ABS(time/vector
+163))-256¶
```

but what you really meant was;

```
x= ABS(width*12)-(ABS(time/vector
+163) -256)¶
```

This time, there is no error as far as ARexx is concerned. Both of these lines are perfectly valid bits of ARexx code and can be understood and executed by ARexx, but they will give you very different results. This is one of the most common forms of mistakes, and unfortunately is the hardest to find. Imagine your program is a hundred lines long, and somewhere there is just one line which is wrong – the whole program isn't going to work properly and it will probably take hours to find out why.




## TESTING, TESTING

Of course, one of the ways of making sure that things are going to work is to try them out extensively first. You could, for example, just try sending a single line to be interpreted:

```
RX "say ABS(256*12)-(ABS(12/3
+163) -256)¶
```

substituting values which might crop up in your program. If you want to go one step further, you can always write a small test program to test a whole range of values:

```
/* rexx test */¶
DO  width = 8 to 1024 BY 8¶
   DO time = 1 to 10¶
        DO vector = -6.25 to 6.25
BY 0.05¶

x= ABS(width*12)-(ABS(time/vector
+163) -256)¶
SAY  WIDTH time vector  "= = ="
x¶
        END¶
   END¶
END¶
```

Obviously, a script like the above will cause a huge amount of data to be printed on the screen, and it could be rather labourious to check that the output is within the range you are expecting. With a simple 'black box' function like this which gives one result, you could easily have ARexx check that the output is within the desired range.

Instead of the `SAY` statement in the example above you could include this:

```
IF (X<0 or X>256) THEN DO¶
   SAY "WARNING - X Value of  " x
" encountered¶
   SAY "Width = " width "time =
"time "vector = " vector¶
END
```

Which lets ARexx check itself for errors! This pretty simple example doesn't really merit this detail of analysis, but I'm sure there are plenty of programs which could.

## SAY WHAT YOU WANT

A simple way to keep track of what your programs are doing is to have them tell you. Imagine this code fragment:

```
count = 1¶

DO UNTIL EOF('infile')¶
   READLN('infile',name.count)¶
   count = count +1¶
END¶

SAY "I have " count " files to
process"¶
DO  I = 1 to count¶
   SAY "processing file " count
", named " name.i¶
   Call PROCESS(name.i)¶
END
```

When this script (which is obviously part of a bigger program, which opens files and has a function called `Process` defined somewhere) is run from the shell, the script will provide feedback telling you how many files it is processing, and what they are called. This can be very useful. As it stands, the input file might have a blank line at the end, or something which isn't checked for, and could result in an erroneous count. Or it may be that the names have extra spaces in them which causes the function not to work properly. These will be easy to identify from the results displayed as the script executes. In fact, this example is pretty close to something I used to help check the automatic HTML generating software we covered last issue.

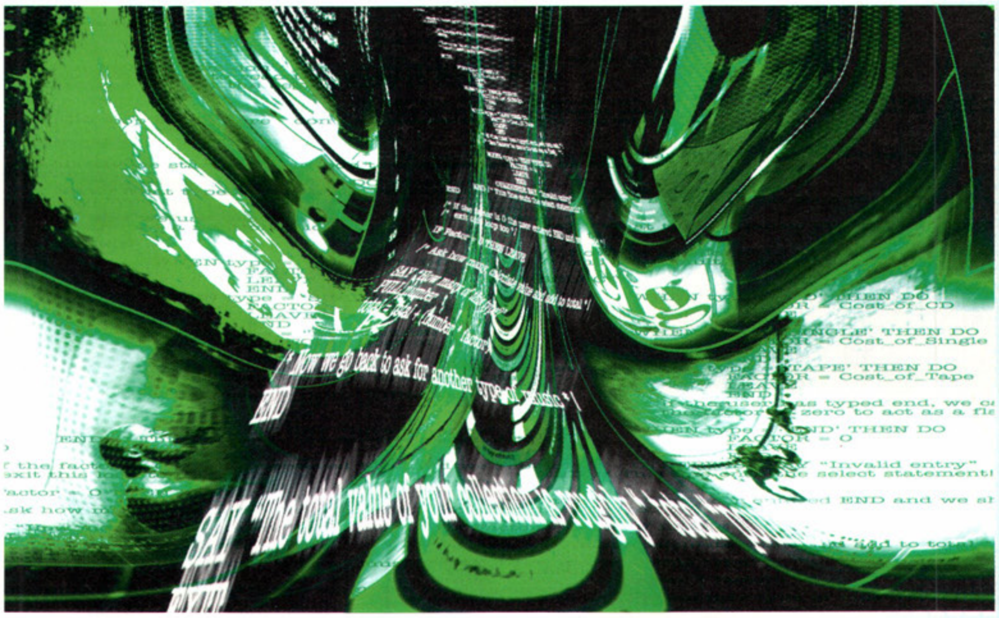
If you wanted to get truly interactive, you could add the line:

```
PARSE PULL variable
```

Which would simply pause the script until you pressed return – handy if you are likely to get a lot of results on screen (this is known as a Break Point in programmer speak). While I'm in the mood to give out handy tips, I also highly recommend you install King CON (or upgrade to WB3.5) so that you'll be able to scroll up and down the shell window to see previous results.

## LET ME IN!

Of course, if you are developing a fantabulous script with a nice GUI that isn't driven from the Shell or, perhaps even more scary, developing a script which interacts



with other ARexx scripts or programs, it can be difficult to see what exactly is going on. Thankfully, there are some handy tools in the REXXC: drawer that will help you out.

One of the most useful, in cases of emergencies, is HI – which stands for Halt Interrupt. This will cause each ARexx script to receive a halt signal, and will stop almost every ARexx dead in its tracks (handy if one of your scripts starts reformatting your hard drive or calling Australia on your modem).

The other four useful programs are TCO (Tracing Console Open), TCC (Tracing Console Close), TS (global Tracing Set) and TE (global Tracing End).

TCO will open a console window, which you can use to see tracing data sent from your programs. It uses the stderr port, and any information sent here will be displayed in the console window.

You can also send data directly to the tracing console from inside an ARexx script using the logical device "stderr", so you don't have to wait for things to go wrong before you get any feedback.

For example:

```
CALL WRITELN STDERR,  variable1
variable 2¶
```

Normal errors will also appear. But if you really want to, you can see everything that is going on within your program. Simply insert the TRACE ON command. There is a complete list of the TRACE options in the boxout below.

You can also turn tracing on for all scripts, by using the shell command TS – this is pretty much essential when your programs call other scripts etc, as it enables you to trace the whole process. In general, I'd advise using simple break points to test programs wherever possible, as using the tracing console requires a lot more effort, thought and concentration. It is, however, the only way to find evil problems that can lurk when you have complicated scripts.

That's about it for tracing, I hope you'll be able to join us next issue for a look at Workbench 3.5.

Nick Veitch

## EASY TRACING

**To have tracing data appear in the global tracing console, you'll need to activate tracing somewhere in your script by using the command:**

```
TRACE ON
```

**Thereafter, every line the program executes will appear in the tracing console, prefixed by a line number.**

**If you need more information than this, you can try one of the other TRACE options:**

### TRACE COMMANDS

**All command clauses are traced (these clauses are used when you execute another ARexx script or external program within your own script)**

### TRACE ERRORS

**All commands that generate a non-zero return code are displayed (e.g. if you tried but failed to open a file).**

### TRACE RESULTS

**All the lines of the program are displayed, as in TRACE ALL, but this time the results of each line are displayed too.**

### TRACE INTERMEDIATES

**For instant data overload, this will trace every bit of evaluation which occurs in each line – handy for very complicated lines of code.**

### TRACE SCAN

**TRACE SCAN is the same as TRACE all, but the program execution is only simulated, so nothing is actually executed – useful if you are nervous that the script will do something naughty.**

### TRACE LABELS

**Only labels are traced, which means you can easily see which parts of the program are causing a problem.**

# Program Perfection

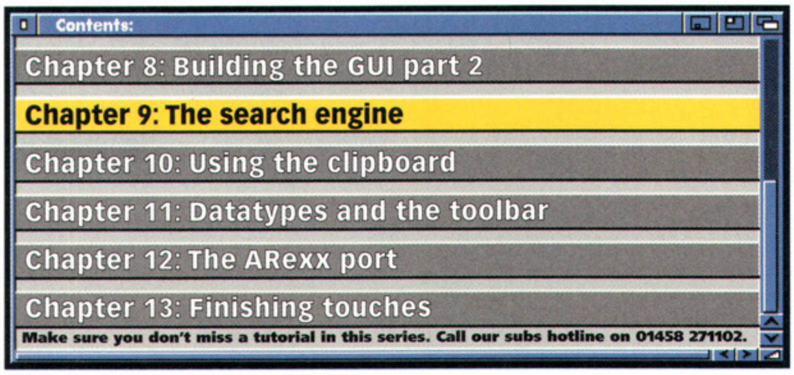
On the CD -In_the_Mag-/Program_Perfection

The ability to search through text is something you should really seek out in a text viewer.

Here we are in the next instalment of what is increasingly inaccurately called Program Perfection. I've been talking a lot in the previous eight chapters, but producing very little of the source code that I've promised or the documentation. The best laid plans and all that. Hopefully, I'll get a chance to catch up with myself over the Christmas holidays.

The title of this chapter is 'The search engine', so I guess that is what I'd better talk about. After all, a search capability is the key aspect that tends to be missing from a lot of the text viewers available for the Amiga, and this was part of the reason for choosing the project that we did.

**For clarity, we've added the ¶ sign in the listings to show where you need to enter a Return.**




## INTERFACE ISSUES

How do we want the search facility to function? Well, hitting the 'S' key in the main window or selecting 'Search...' from the menu will pop up the search requester (see Figure 1). Here, the user can enter a string to look for in the text with the string gadget provided. A useful feature would be the ability to paste text from the system clipboard into this gadget: luckily this is handled for us by Reaction/ClassAct.

The starting position for the search operation will either be the top line of text currently displayed in the textview gadget or, if a search has been performed before, the last search position. The search requester offers buttons to look backwards (Previous) and forwards (Next) from the current position and to start the search at the beginning of the file (First). A checkbox gadget selects whether the search will be case-sensitive or not.

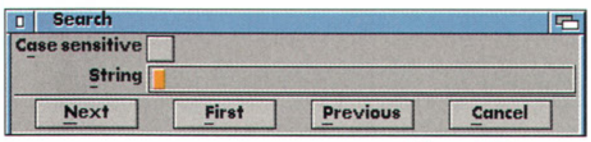



**Figure 1: The search requester.**

When an instance of the search string has been found in the text, this will be signified to the user by highlighting that instance in the text and, if necessary, moving the display position within the textview gadget so that highlighted string is visible. The highlighting mechanism is the same as is used to permit the user to select text with the mouse. I will discuss this more next time when we also add code to handle this and functions to paste selected text to the system clipboard.

The search requester will stay open until the user closes it with the Cancel button or close gadget. It does not block input to the textview window, though. For instance, the user can scroll around in the window while the search requester is visible; this will modify the search position accordingly. The search function is also operable via commands to *AFMore*'s ARexx port. This will not require the requester to be open or indeed any windows at all (more on this in chapter 12).

*The search requester offers buttons to look backwards and forwards from the current position and to start the search at the beginning of the file*

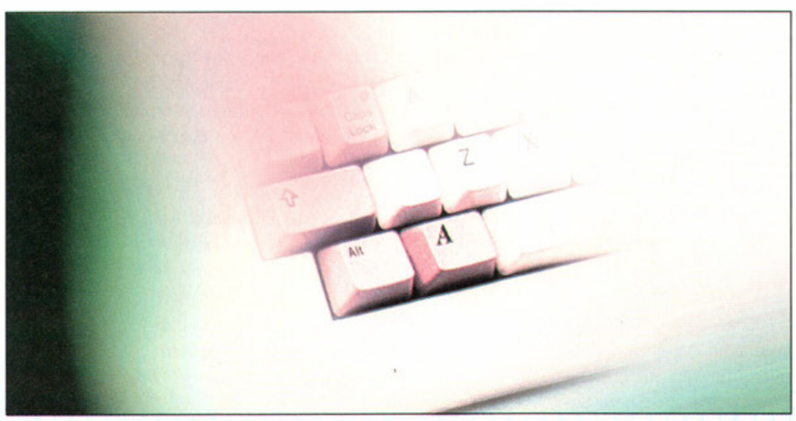
## THE NITTY GRITTY

Now that we have described the user interface for searching, it's time to go into the mechanics more.

First off, we want to separate the code that actually does the work and the code that handles the interface. The search requester will be packaged into a BOOPSI class and will be a descendent of the AFWindow class that we talked about last time. Messages passed from this window will be managed by the event handler mechanism described last issue.

The module that will do the actual business work of searching, we shall call the TextSearch class. To slip into the object-oriented parlance once more, the TextSearch class is a descendent of the Text class. It inherits all the attributes and methods of Text and so can be used in identical fashion, but it adds two extra methods `FindNext()` and `FindPrevious()`. These will both take a search position, a string to look for and a case-sensitivity flag as arguments. On success, both routines will return the position in the text where it found the string or a null position if it couldn't find it.

Remember that we are not actually implementing TextSearch as an OO class, since we are doing it in plain C. We fake polymorphism by casting pointers between Text and TextSearch objects.



## START ME UP

***AFMore* accepts any of the following arguments as startup options. These can be specified on the command line or equivalents may be used as an icon's ToolTypes.**

| | |
|---|---|
| **FILE** | **The file to display** |
| **TABS/N** | **Tab setting for file (default=8)** |
| **SCREEN/K** | **The name of the public screen to open on** |
| **FONTNAME/K** | **The font name to display the file in** |
| **FONTSIZE/N/K** | **The font size to display the file in** |
| **CLIPUNIT/N/K** | **The clipboard unit to use for pasting** |
| **REXXNAME** | **The name to use for *AFMore*'s ARexx port** |

TextSearch performs only simple substring searches. It would be more powerful to permit AmigaDOS pattern matching, but this would add more complication than we have time to deal with at the moment. While dos.library provides functions for parsing patterns and to match parsed patterns against strings of text, the result from this function is only a boolean status. We would only be able to find out whether the pattern was found, not where in the text the pattern was found. So, that is not much use for us.

The algorithm that TextSearch uses is a simple, brute-force, character-by-character comparison. This is slow and inelegant, but this could be easily replaced at a later date by a more intelligent and faster method. Chalk up another point to modularity.

We shall be slightly devious in an attempt to marginally speed up searching, however. If you remember, the text that is encapsulated by our Text structure exists in memory as a single block. The Text structure itself contains a list of Lines, pointers into this text block marking the start of each new line of text. We could traverse this list and search each line of text individually, but, instead, the method we shall choose is to search the buffer where the block of text is stored. Private support routines are then required to map between text positions (that is, a pointer to a Line object and a position within that line) and a position within the text buffer (that is, a standard character pointer) and vice-versa. Thankfully, this is rather trivial to implement.

## THE AGONY OF CHOICE

To change the subject completely and to fill in the remaining space, I want to talk about specifying start up parameters to control *AFMore*'s behaviour. *AFMore* accepts a number of options on startup (see the boxout). The most important is the name of the file you wish to display. If this is not specified, a standard file requester will be opened for the user to select a file. The other options are preference settings which modify *AFMore*'s behaviour.

The program may be started from the Workbench or a shell. With the Workbench, there are two methods. You either double-click the *AFMore* icon itself (and select a project file to view) or you use *AFMore* as the default tool for a project. The options are then stored in the project icon's Tool Types. These will take priority over any Tool Types specified in the *AFMore* icon itself. When started from the shell, options specified on the command line take priority over options specified in the project file's icon (it still looks for icons even on shell startup).

## GET THE MESSAGE

The normal method for finding startup parameters in AmigaOS would be to first determine whether the program was started from the Workbench. The way this is performed is compiler dependent: Workbench sends a message containing any arguments to programs that it runs; the compiler startup code will generally handle obtaining and, eventually, replying to this message for you and will pass you a pointer to it.

If you receive such a message, you can then step through each argument in the list it provides. The first argument will be the icon belonging to the tool itself, your program; the others will be any projects that are trying to use your program.

**We shall be slightly devious, in an attempt to marginally speed up searching, by choosing to search the buffer where the text is stored**

Each argument contains a lock on the directory where its corresponding disk object lives and, if it is a file, its name also. To access the object's icon, you have to determine the object's pathname (minus the '.info' suffix – this is added later automatically). For drawers, simply extract the drawer's full path from the given lock.




**You can configure AFMore's behaviour via the icon Tool Types.**

For files, do the same but also append the filename to the path. If the object is a volume, which it will be if the supplied lock doesn't have a parent directory, you must build a path with the volume name and 'disk' as a filename.

The icon corresponding to the argument, if one exists, can then be accessed via icon.library's `GetDiskObject()` routine (this is what handles the '.info' suffix). If no icon exists for the object, this function returns an error and the `GetDefDiskObject()` call can be used to furnish a system default icon for the object. Whatever, the Tool Types for each icon can then be examined to see what options are required.

## WHAT'S MY LINE?

If you don't receive a message from Workbench then your program has been started from the shell and you must parse the command line you've been given.

While this is parsed and chopped into individual arguments by the standard C startup code and passed to `main()` via its argc and argv parameters, the easiest way to do this – and the one that fits in best with AmigaDOS conventions – is to use the dos.library `ReadArgs()` function. This accepts a standard template string which specifies the options you want to recognize.

Two methods are thus required for parsing startup options to the program, one for analysing icon Tool Types and one for the command line options. This is really unnecessary duplication: both are in essence performing the same thing. Besides, querying Tool Types individually is a rather wearisome process.

To overcome these problems, we will construct a module which builds a string from an icon's Tool Types array. This string will be parseable by the `ReadArgs()` call. Since both entry methods to the program support similar options, no additional processing is required and we can respond similarly to either startup type. A blow for efficiency.

Observant readers may notice that there is already a package available to perform such a job: Stephan Rupprecht's ExtReadArgs module, available from the Aminet (see dev/misc/extrdargs_v1.5.lha on the Aminet). Surely we could re-use his work. Well, my instinct for laziness says yes, but unfortunately it doesn't do precisely what we want. Our module will be based on his code, though. (The ability to recognize when plagiarism is appropriate or not is another hallmark of a successful software engineer. And don't worry. We shall credit him for it.)

## NEXT TIME

I intend to be working off my forthcoming turkey over-indulgence by catching up on this series, so, with any luck, all the code and documentation for the modules that I have talked about up until now will be complete and will be on next issue's coverdisc. In the next issue, the focus will be largely on interface programming once more, because the TextView gadget needs to be modified to allow the user to select and highlight text with the mouse and send it to the system clipboard. Consequently, we also need to discuss how to access the clipboard.device, but here again we shall be as lazy as possible.

**Richard Drummond**

# Banging the Metal

On the CD -In_the_Mag-/Banging_The_Metal

## Ramsey, DMac, Gayle, Gary, Budgie, Buster and Akiko join our custom chip family

This column explores the extra metal that distinguishes the A1000 from the A4000T, and all models in between, rather than the generic Amiga hardware. The big six chips occur in every Amiga: the processor, two CIAs, Paula and two video/DMA parts (typically Agnes with Denise, or Alice and Lisa for AGA). Commodore had their own chip fabrication plant and made extra full custom chips for each model. They also wired off-the-shelf clocks and SCSI controllers into many Amigas.

The custom parts have mnemonic names like Buster (for Bus Terminator) in Zorro II and Zorro III versions, the Gary and Gayle interface gate arrays, DMac for Direct Memory access or Ramsey for RAM control. Most come in matching square packages but their functions vary. This column gives an overview, with more details on the CD.

**Rather than go into all the grisly details in this column, there are programs, examples and more indepth details on our coverdisc**

### RACING RAMSEY

Ramsey is the A3000 and A4000 memory controller. Bit 4 at address $DE0003 in later versions can speed up RAM access, given fast memories and a following wind. It's only accessible from code running in Supervisor mode, making it hard to POKE from a normal program – SetRamsey on the *AFCD* is the easiest way to tweak this, and associated bits that control memory refresh and burst transfers.

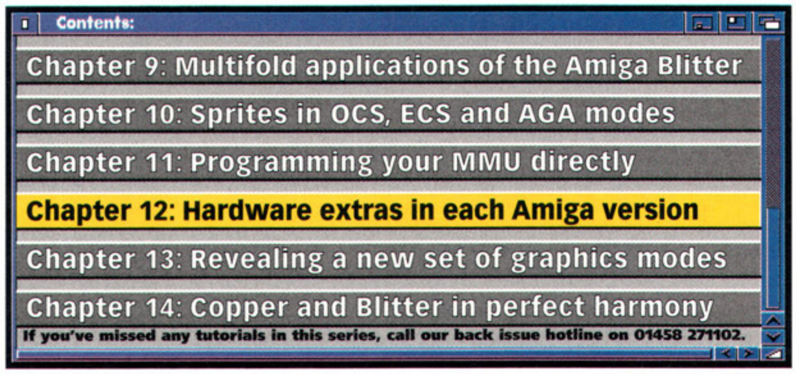
### REAL-TIME CLOCKS

Commodore's favourite real-time clock chip was the OKI6242, which has 16 four-bit registers, holding digits of the data and time. The first A2000s mapped this at $D80000, while A500s and A2000Bs base it at $DC0000.

The table shows where the digits are stored in memory, as BCD values between 0 and 9. Only odd addresses are used. Day 0 is Sunday, and year numbers less than 78 are assumed to be in the new millennium. Consider this your advance warning of the 2078 bug!

You can read the clock directly, assuming it's there, without AmigaOS. Set bit 0 of register 14 to 'hold' the setting momentarily, to prevent errors. Reading 1:59:59 could otherwise give 2:59:59 if the clock ticks just after you read the minutes and before you read the hour. The 'hold' bit buffers one pending tick so you keep time as long as you clear it before a whole second has elapsed.

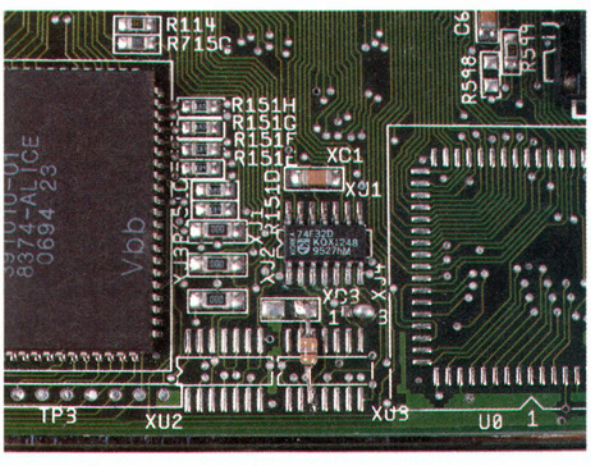
The other bits in this register and all those in the next one are not needed on Amigas. Bits in the last register can reset or stop the clock and select 12 hour mode; bit three engages a 'test' setting.




### BASIC EXAMPLE

The BASIC loop continuously reads and displays the clock registers. It does not set the hold bit, as that might confuse system calls. If your program needs to poll continuously, calls to DOS Delay – as in DMAmon – stop it hogging processor time. The example on *AFCD49* assumes the A1200's base address and 32-bit bus.

The clock chip uses only four data bits, so its registers appear at alternate odd bytes on a 16-bit Amiga, or every fourth byte, at offset 1, 5, 9 and so on, on A1200s. The AND operator sifts out the four least significant bits of each word. If a count does use the whole range, like a day number from 0 to 6, unused bits are generally zero, except bit 2 of the 'tens of hours' register, which distinguishes between am and pm in 12 hour mode.



### PERMANENT BITS

The A3000 and A4000 have a different type of clock chip, with a small amount of 'non volatile' memory as well as the battery-backed clock. This memory stores UNIX and SCSI configuration on an A3000 or A4000T, but there are spare bits, especially on the IDE-only A4000. Commodore never documented the access mechanism, but provided BattMem and BattClock libraries to read and write this hardware.

The CD$^{32}$ demanded permanent storage space for saved games so nonvolatile.library allows named blocks of data to be stored in CD$^{32}$ battery-backed RAM, or on disk if the Amiga has a writeable drive. CD$^{32}$s have 1K of non-volatile RAM. Tools on *AFCD49* read, write and edit this, via system routines as nonvolatile 'memory' could be in RAM or on disk.

### CD32 JOYPADS

Another library added for Workbench 3.1 allows access to the extra buttons on CD$^{32}$ joypads. Commodore's lowlevel.library suits system-friendly games coders, while hackers can read the buttons by banging POTGO registers and polling bit 7 of CIAA port A. The CD example ReadJoyPad.S stores the status of the seven extra buttons in a byte of main memory.

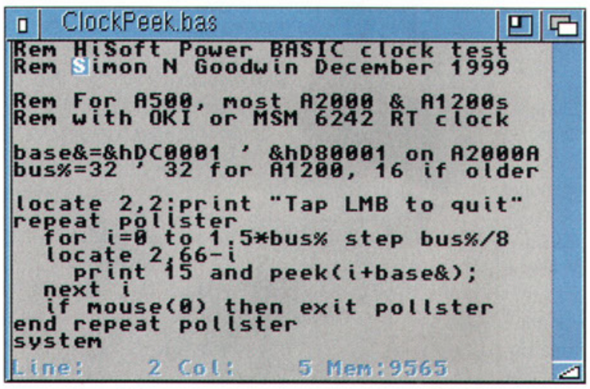
### CD32 AKIKO

Akiko is a chip unique to the CD$^{32}$, so simple that it worked first time back from the chip fab. Besides mundane CD functions, you can give it eight long words of chunky graphics and read back eight separate long words for each Amiga bitplane.

If Akiko is present, ChunkyToPlanarPtr, offset 252 on GfxBase, holds its address, otherwise zero. You can use the registers directly as long as you allocate the blitter while you do it – there's no separate hardware arbitration. Akiko gets confused if you supply less than the full 32 pixels at a time, or two programs bash it at once. You

## Example Listing

```
Rem HiSoft Power BASIC clock test
Rem Simon N Goodwin December 1999
Rem For A500, most A2000 & A1200s
Rem with OKI or MSM 6242 RT clock
base&=&hDC0001 '&hD80001 on A2000A
bus%=32 '32 for A1200, 16 if older
locate 2,2:print "Tap LMB to quit"
do
for i=0 to 1.5*bus% step bus%/8
locate 2,66-i
print 15 and peek(i+base&);
next i
loop until mouse(0)
system
```




**A BASIC program to read the real-time clock registers.**

write and read the same addresses; the least significant bitplane arrives first, so you can stop as soon as you've got all you need.

Akiko does the sort of conversion that's trivially easy in hardware, and tortuous in software. AmigaOS uses Akiko automatically if it's present, and dimwitted software otherwise. Patches abound to improve this code, but can't beat the hardware approach. Mick Tinker reckons Akiko could easily be programmed into the BoXeR's custom logic.

### IDE ADDRESSES

The A600 and A1200 IDE interface is based at address $DA0000. Data transfers are 16-bits wide through a port there, while the interface is controlled through a set of eight bit ports later, with disk block addresses scrambled between them, for compatibility with old 8088 PCs. IDE drive sector and head counts are often misleading, because drives map blocks linearly, as SCSI always did, but pretend any combination of sectors, sides and tracks that delivers the desired capacity as ancient PCs expect it.

Rather than go into the grisly details of WD1010 compatibility, I've put SuperBASIC and assembly language programs to probe the IDE port on the AFCD. Run these from Amiga Qdos, as it's not a good idea to bang IDE while AmigaOS thinks it has exclusive access. If you speak C, Amiga Linux and NetBSD sources contain similar details.

The A4000 IDE interface is almost identical but mapped from $DD2020. Registers nearby could support faster PIO modes 1 and 2, but Commodore never got those working, according to Elbox IDE specialists.

### SCSI INTERFACES

The A3000 uses a Western Digital 33C93 SCSI controller. This was made to SCSI 1 standards, but allows SCSI 2 commands, although it struggles with some modern drives. Commodore shipped an early version marked PROTO; later pin-compatible parts fix some related problems. A Commodore DMac chip, extended from that used on the A2091, transfers between the 8-bit SCSI controller and 32-bit A3000 memory.

When Commodore revived SCSI for the A4000T they used a more potent controller, the NCR 53C710, with its own DMA logic and support for 128-bit burst transfers. A4000T SCSI implements the A4091 (nee 3091) SCSI 2 FAST on-board. The same chip was used on Warp Engine, GVP and CSA accelerators. Its RISC coprocessor supports fast memory-to-memory DMA transfers, but I have yet to see a program that uses this. Routines on this issue's coverdisc manipulate a NCR 53C710 directly from SuperBASIC.

### GARY 4 GAYLE

The A500's Gary chip replaced discrete bus control and addressing logic in the A1000, and contains extra hardware to reset and control the internal floppy drive motor. Gary is pure 'glue' logic, and you don't really notice it, even when banging the metal. The same goes for Budgie and Bridgette chips, in A1200s and A4000s respectively. A3000s and A4000s have their own Gary variant.

Gayle is the sophisticated surface-mount replacement for Gary which implements the PCMCIA port on A600 and A1200s. This uses the second half of the Zorro II area, preventing 24-bit Fast RAM expansion beyond 4M. A Gayle register switches the PCMCIA card's access to this space. Two subsequent 128K areas are reserved for card 'attribute' ROM and I/O space.

## OKI6242 TIME REGISTERS

| | |
|---|---|
| $DC0001 | Seconds |
| $DC0003 | Tens of seconds |
| $DC0005 | Minutes |
| $DC0007 | Tens of minutes |
| $DC0009 | Hours |
| $DC000B | Tens of hours |
| $DC000D | Day of month |
| $DC000F | Tens of days |
| $DC0011 | Month number |
| $DC0003 | Tens of months |
| $DC0015 | Year (units) |
| $DC0017 | Tens of years |
| $DC0019 | Weekday, 0..6 |

**Clock registers use four bits of each word, or long word on A1200s.**

## RESERVED ADDRESSES

| | |
|---|---|
| $6xxxxx | PCMCIA 4M RAM |
| $A0xxxx | PCMCIA attributes |
| $A2xxxx | PCMCIA I/O space |
| $A4xxxx | CDTV card status |
| $A6xxxx | PC bridge I/O space |
| $A8xxxx | 'Workbench' ROM |
| $B8xxxx | CDTV system area |
| $BFxxxx | CIA registers |
| $Cxxxxx | 'Ranger' slow RAM |
| $D0xxxx | PC bridge memory |
| $D8xxxx | 'Spare' port area |
| $D9xxxx | 'Network' ports |
| $DAxxxx | A600/1200 IDE |
| $DBxxxx | 'External' IDE |
| $DCxxxx | Real-time clock |
| $DDxxxx | DMac & A4000 IDE |
| $DExxxx | Gary, Ramsey, ID |
| $DFxxxx | Main custom chips |
| $E0xxxx | CD32 extra ROM |
| $E8xxxx | Zorro II autoconfig |
| $F0xxxx | Cartridge ROM |
| $F8xxxx | Kickstart ROM |

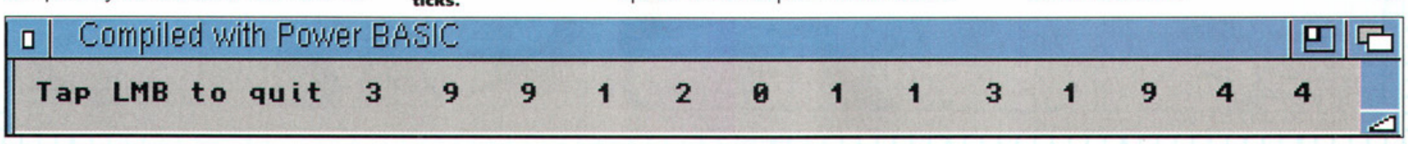
**Commodore finely carved up the 24-bit address space.**

### NEXT ISSUE

We have now comprehensively discussed Amiga chips and how to bang them but the fun really starts when you set them up to tickle one another. In the finale I'll demonstrate useful routines that use the Copper to program the Blitter to program the Copper to program the Blitter! The result is a host of new Amiga video modes, on classic lines, guaranteed flicker-free with zero CPU overhead – and a neat demo of the potential of metal-bashing.

Simon Goodwin

**ClockPeek shows register values as it ticks.**





# MailBag



Send your letters to: Letters To The Editor • Amiga Format • 30 Monmouth Street • Bath • Somerset • BA1 2BW or email: amformat@futurenet.co.uk – putting 'Mailbag' in the subject line.

| SEND US | SPARE US |
|---|---|
| Pictures, designs, photographs | Long, looong letters with numerous points Keep it concise! |
| Your homebuilt Amiga projects | Attachments that we can't read like rtfs |
| News about Amigas in use in the real world | Illegible handwriting |
| Views about the mag | Questions asking why Amiga haven't brought out the MCC yet |
| Ideas for future issues | Technical questions which should be addressed to Workbench |
| General questions you want answered (not technical ones!) | |

## AMIGA MP3S?

I was recently looking at the Walkman section in Dixons when I noticed an MP3 player. Anyway, according to the nice man behind the counter, you can connect it your PC and transfer MP3s to and from the thing. So, I was wondering if there is any software for the Amiga to do this before I go out and buy one. Or, if anyone else knows of such software they can email me or find me on Arcnet on channel #Poweredbyamiga – my nickname is eJ.

Thanks for your help and keep up the good work.

**_Steven Jones_**
elite69@free4all.co.uk

*Not that I know of at the time of writing this part of the mag, unless it's a simple serial transfer, but I doubt it'll be long before some enterprising Amiga owner comes up with something.*

## BOOT TIME BADNESS

In my opinion Gateway's demise in producing the MCC computer is just the opportunity that hardware licence holders should have had from the start.

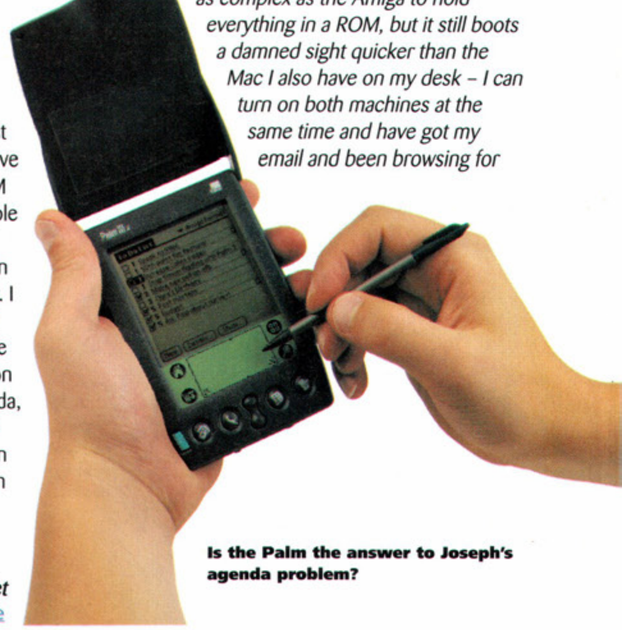
When I bought my Amiga 2000 back in 1986, it was a successor to an ageing Commodore CBM PET computer with just 32K of RAM. The PET was really the first home computer that you could buy for any money, at least in Belgium. It had some remarkable features to which it owed its success: an IEEE bus which made it able to steer all kind of measuring equipment that made it instantly popular in scientific and technical university departments, a BASIC interpreter in ROM which was available at powerup instantly – you could do simple calculations or develop and test a program in the most interactive way possible – and a user ROM where you could plug in a simple ASCII editor.

In those days this meant an enormous jump in productivity. I still hate the bootup time. I am not in front of my computer the whole day. It is the major reason why I never could use an agenda, or a notebook on the Amiga to satisfaction. So I hope to see an Amiga which you can switch on with your chosen applications present instantly.

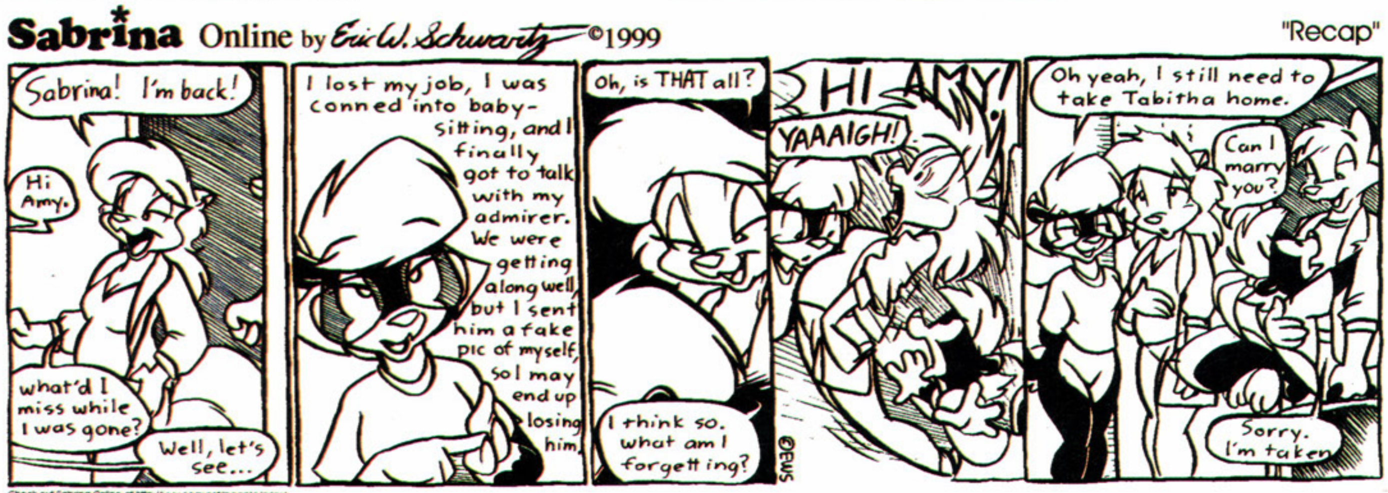
Regards,

**_Joseph Duchâtelet_**
jduchatelet@arcadis.be

*It would be impossible for a computer as complex as the Amiga to hold everything in a ROM, but it still boots a damned sight quicker than the Mac I also have on my desk – I can turn on both machines at the same time and have got my email and been browsing for*



**Is the Palm the answer to Joseph's agenda problem?**




Check out Sabrina Online at http://www.coax.net/people/erics/

## AMIGA SWAP

Thanks for printing my letter in *AF130*. It came as a complete surprise to see something of mine published in a "best selling Amiga magazine". By the way, that was an Amiga 2000 I saw in the video editing room and there's an A1200 in the TV control room at my college – the software they use is Scala.

It would be nice to see Amigas replacing Macs at my college as they are crashing every day and causing students to lose work. Of course Macs aren't the only unreliable computer platform, PCs are of course the most unreliable. For instance, when I was doing my music terminal task at school there were three people using a PC with a program called *Sibelius*, one using the piano and me using my trusty Amiga and the PD program *Composer*. I knew my Amiga wouldn't let me down and it didn't because the PCs crashed. Fortunately for those using the PCs it was a practice exam but it wasn't a good omen for the actual one!

**Elliott Bird**
**Southend-on-Sea**

*news by the time my Mac has booted. As for using an agenda, why not complement your Amiga with a PDA which is able to be instantly available? My choice would be the Palm IIIx, but the new 5x looks good too.*

## MORE FREE STUFF PLEASE

Hello to everybody at *Amiga Format*. You are doing a great job. However, a few suggestions...

I find it very difficult that the software houses don't realise the benefit that they would obtain by "donating" some old commercial releases of games or programs as a contribution to your *AFCD*. It would be a benefit not only for *Amiga Format*'s image, but a new lease of life to the world of Amiga. Imagine: *Wordworth* versions before 4.5SE (for example), *Final Calc, Final Data* – I don't suppose Digita would have a problem doing that, since who would buy the old versions instead of the new ones? And not only Digita but a bunch of other software houses. The same for the games.




**Look at those figures! More than 41,700 files on that CD, and you want more?! You want the moon on a stick you do.**

There are some old versions that nobody cares to buy anymore.

It would be an act of good will from the software houses and proof that they want to maintain and support the Amiga scene. Please check what can be done about this.

Also, I like to use the programs that *Amiga Format* puts on its CDs and I especially like the coverdisks which are just great but, would it be possible to put the same high quality labels that you put on the floppy disks on the CD too?

I have a bundle of the coverdiscs which I would like to put your professional looking sticker labels on. Perhaps you could put a series of labels for the most handy programs on your excellent cover CD's?

Keep up the good work.

*Andy Nash*
andynash55@hotmail.com

*How would these companies be supporting the Amiga by releasing really old stuff on our CD? Also, would the fact that you'd got 4.5 preclude you from actually buying version 6? I think it might and so do the companies you mentioned which is why they no longer produce Amiga software.*



**Good old Petro. It's nice to know that no matter what changes in the States he's always there.**

## YAY! PETRO!

With all the euphoria and frequent U-turns at Amiga many have become disillusioned with the Amiga. I was the same until I thought about the situation. I have come to the conclusion that it is the American based Amiga operation that is strangling the Amiga. Unfortunately many people, myself included, have assumed Petro has also been liable for the U-Turns and all the other recent incidents. However, it is clear he is not. In my opinion, Petro is currently used by Amiga in the USA as a mascot and it's time for change.

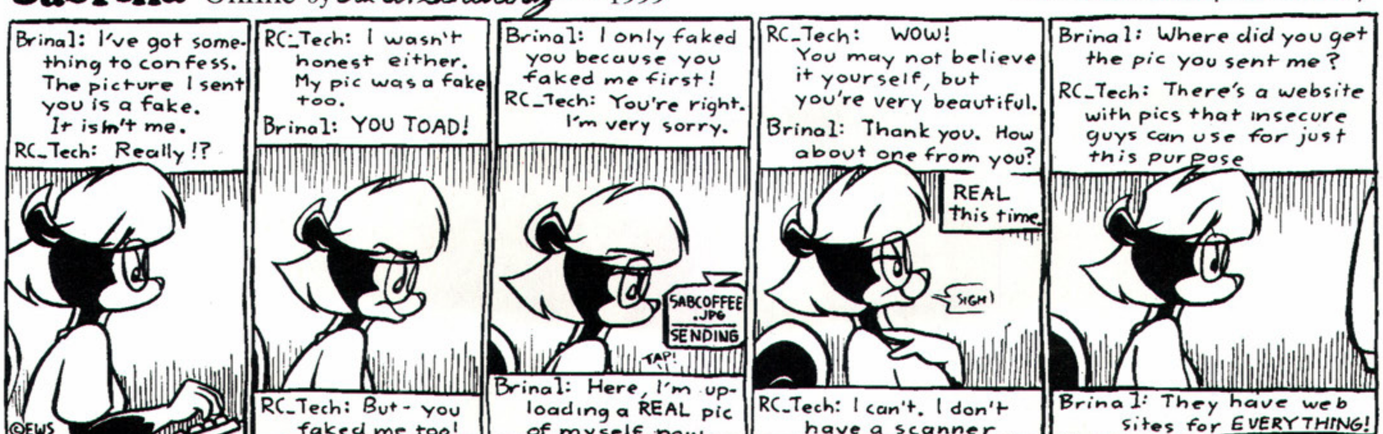
With a tear almost in my eye, I re-read the Computer '95 report where the previously unheard of Petro (at least to my knowledge, April 1995 was the first time I heard of him), announced that with phase 5's co-operation, the Amiga would move to PPC. Initially 100MHz 603 based, moving to 150MHz 604. This never happened, Petro's vision of a hardware independent AmigaOS was a good idea and Amiga Technologies, despite poor Christmas sales, were looking good. Escom's untimely demise lead to another crisis that has manifested itself outright to this very day.

It was with interest that I read a transcript of a quick IRC session on the Internet, held in this years dismal Computer '99 show, with many Amigans questioning Petro about his views. It's clear he doesn't have a clue what they (Amiga in the USA) are and aren't doing, and he has very little communication with them.

It was also evident that Petro is very much an Amigan and admitted that, while the A1200 is popular still in Third World countries, selling the A1200 in Europe (and the USA), is an impossible job. He commented that 'his old dream' of having AmigaOS on PPC was still something he wished to coordinate and do, regardless of what Amiga (in the USA) were doing. There was something quite sincere about this, and

**Continued overleaf ➡**

**Sabrina Online** by Eric W. Schwartz ©1999 — "The Mutual Deception Society"




Check out Sabrina Online at http://www.coax.net/people/erics/

## HERE'S BOINGY, KIDS!



**Thanks for printing my letter in *AF128*. Didn't anyone send any character designs? Oh well, never mind (sulk, mutter). I've enclosed a few of my own designs if you're interested. There were several others but they were such twisted abominations that they must never be let loose on the public! They aren't exactly masterpieces of 3D rendering but, if nothing else they gave me an idea for a possible game – don't hold your breath though, I've never written a game in my life.**

**Great cover design for *AF131*! Very stylish and the FAQ section is an interesting idea. Any chance of an Eric Schwartz interview?**

***Nick Rowe***
***West Midlands***

***An Eric Schwartz interview is a great idea. Look for it soon.***

**It's a shame you can't use the slogan "What's yours called?" as it's already been done.**

it almost made me forget about the current turmoil in the Amiga industry.

So it is now that I think we should start supporting Petro in his quest to deliver OS4.0 PPC, we don't need a radically different AmigaOS to start this revolution, we just have to work on the core things for ease of use and ultimate Internet integration. If we could blend AmigaOS (power and efficiency) with MacOS (ease of use), then we could be on to a winner. The only gap remains in the hardware, but IBM's POP design could turn out to be the way forward.

So, in order for us to carry out this true Amiga revolution, not a Linux one, support Petro, and support OS3.5. At least they will know that we are all behind them. I also suggest that if you have *AF80* read it again and you will see that the situation is not yet out of hand, there is hope and I'm sure you, like me, will feel touched by it.

All the best,

*Nick Lamburn*
oruk-amigan@free4all.co.uk

*It is certainly true that Herr Tyschtschenko has been a figurehead for Amiga, and that he hasn't always had the best choice of words, but while Amiga in the states is clamming up, he remains friendly and open in increasingly difficult circumstances, so I, for one, applaud him.*





**Here's your next project then: rebuild your machine in wood!**

## I HAD A WOODEN CAR ONCE...

G'day, I found these on the web and thought you may be interested!

I'm not sure what the website was but I think it's: www.thenextstop.com/base dir/store b/. The mouse is actually an RF mouse it transmits its information using radio waves!!

*Adam Foreman*
fman@i-o.net.au



## PSX SPEEDBALL

How's this for a bit of Amiga spotting? I found this in the *Official Australian PlayStation* magazine. "Empire is hard at work on updated Amiga future sports sim, Speedball 2100."

True story, I've still got the clipping if you want to see it.

*Stephen Kinzett*
amiganut@iweb.net.au

*It's okay, we believe you. People have been working hard on the game for some time now, let's just hope it isn't a complete shambles like Sensi became.*



**We bet the PSX version won't come close to capturing the spirit of the original.**

## 'ONEST ENGINE

PPC GFX card owners. Go and buy *wipEout 2097*! I did and was breathtaken. It actually plays as well as the PlayStation version with maximum view distance and the sky turned on! After the embarrassment that was *Quake* it is good to see a game that actually pushes my set-up (603/160 with BVision) and gets reasonable results from hardware acceleration (though I did have to set up a boot disk so I would have enough video memory to run the game – only 8M D'oh!) Though speaking of *Quake*, if it isn't commercially viable to port *Quake II* (or even III) to PPC/3D Amigas, how about just porting the engine, a lot of games in this style use it (for example *SIN* is based on *Quake II*) and Amiga developers could use

## SPEAKERS' CORNER

Having recently installed OS3.5 (everyone should buy it!) I reckon it's time for me to get up on my soapbox and talk about the Amiga.

It's been a good few years since the Amiga was first produced, as we all know, and since then the Amiga community has suffered several tough blows. In a way it's kind of ironic that a computer which has had such a rough time and cost a lot of people their jobs is still adored by so many people. Of course, this is hardly surprising – it's an Amiga.

Although it's hardly likely that a computer has a soul (stop me if I'm getting weird) having used an Amiga for about 10 years I'm not so sure. Unlike a PC, or even a Mac, an Amiga is more than a collection of chips, circuits and nasty beige case – it's a religion. There is some small mysterious part of an Amiga, call it the 'force', that can be metaphorically kicked, burned and chipped without being destroyed. It's not really the computer but its users – the devotees who put up with companies saying one thing or another and the mocking given by PC users.

The Amiga's spirit is also kept going by journalists who turn what little information they get into an interesting, worthwhile magazine and not just *AF* but those who write amateur mags in their own time. We can still keep the 'force' alive by buying OS3.5 and new software that comes out. I'm sure that some new Amigas will appear but until then we must wait. Microsoft and Apple have already lost the war and our victory, when it comes, will be worth waiting for.

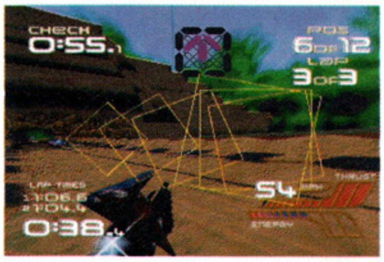
*Ross Whiteford*
*Perthshire*

*Stirring words indeed!*

it as a base for their own Amiga exclusive titles.

In the meantime I'm off for another crack at the lap record at *Odessa Keys*.

*John Monks*
john@jmonks.demon.co.uk




**Are there enough people in the Amiga market willing and able to purchase new 3D games?**

## ABSOLUTE BEGINNERS

My husband insists that one way to promote the Amiga is to encourage the next generation. Hmm, looks like he got quite a head start on ours, eh? At any rate, he has me converted. And thanks to your 'Absolute Beginners' guide I am starting to actually comprehend what he is talking about.

PS – our little Amigan is named Sabrina. Eric Schwartz should be proud to hear it…

*Beth Collingwood*
beth.collingwood@talk21.com



**Ahh, isn't that cute? No, hang on, don't touch those but(^%%$ NO CARRIER**

## BABY STEPS

The Absolute Beginners section is an excellent innovation. The Amiga will be dead only when new users stop coming to the platform. Therefore I would hope that in answer to your question in the last paragraph of the first Absolute Beginners (*AF128* p63), no one would be prepared to say that the series is too easy. This feature, which should be in every issue, will be invaluable for newcomers and those like myself who have been stumbling around without the advantage of expert sales staff to help them along – in this city of over 700,000 our last computer shop that gave competent Amiga support was embezzled into bankruptcy a couple of years ago. (Apparently the owner, the expert in accounting software in this area, allowed his accountant to skim off his liquid cash to use on the lotto!)

The Absolute Beginners in Issue 129, Getting Online, was a great idea as the Internet is indeed an essential tool for the Amiga user. But since one of the aims of getting online is to access the wealth of great software out there on Aminet this article demands a follow-up: the ins-and-outs on dearchiving .lha/.lzx files. When I first encountered such files I was lost until I found someone who could talk me through the process of using lhex. I then wrote down the instructions and saved them for future guidance but other than the basic dearchiving process I really have no idea how to use the full features of either it or its more sophisticated brother, LZX.

The article on fonts a couple of issues back was one of the best and most useful of any Amiga mag article I have seen yet. More of this sort of tutorial please, which could indeed have been an Absolute Beginners, and spare no effort to give basic details that the computer nerds are no longer conscious of but more basic-level users need to learn to get the most out of their machine. It really is frustrating to read a great article that sets you on a new path but then drops you because of the failure to explain one little detail.

By the way, the 'tips' boxes in the tutorials are a fine idea and remind me of the now deceased US *Amiga Informer*, that had boxes like that with handy user tips throughout the magazine. Why confine them to the tutorials? You could use them throughout the mag or give a periodic retake (say quarterly) on the article in *AF130*, '50 Things You Should Know About Your Amiga', and give another 50 Amiga basics from time to time – there must be lots.

*John Matthews*
*Edmonton, Alberta Canada*



**Our complete beginners series seems to have been a hit. If you have any ideas…**

## THERE ARE MORE…

In the '50 Things You Should Know' article in *AF130*, you pointed out an easteregg in the DOpus About requester. Well, here's a link to another DOpus easteregg: http://home.earthlink.net/~horninf1/dopus.html

*Steven G. Wilson, Jr.*
horninf1@earthlink.net

*I have the feeling that you have a PC exe filetype set up and that's the reason you are getting those messages, but it looks pretty neat anyway.*

Ben Vost

## TATTOO YOU?

**Hello, I just saw the issue of *AF* with the picture of that Swede with a C= logo tattooed on his bag, a quite impressive tattoo, but I can top that. Here's a picture of my own tattoo, placed on my lower left arm as you can see.**

**The tattoo was done in July last year and this photo was taken towards the end of the year when it had healed up more. I have also sent you a group photo of me and my friends where you can see my tattoo just so you know it is genuine, I haven't just been playing around with *ImageFX*! So, now my road to eternal glory lies ahead. Kind regards,**

**Darkhawk**
Darkhawk@GMX.net

*Any more tales of epidermal mutilation from any of our readers?*




**Ouch that looks really painful (it's not the black needle that gets you, it's the thicker colour ones).**

# The Gallery

On the CD -ReaderStuff-/-Gallery-

Roll up! Roll up! Bring your works of art here! We love 'em all, but only one artist can win our fifty quid!




## £50 WINNER!

**Rachel The Virgine**
**by Matthew O'Neill**

**Two images. One is a photo, one is not. Which is real, which isn't? It's a question for the Twilight Zone! Actually Matthew's done such a nice job on his version of the original picture we just had to give him the prize this issue. He uses Imagine 5, an 030/50MHz and 32M RAM, but he actually got the image rendered for him on an 060 to save time. Let's hope you can put this fifty quid towards getting yourself a faster Amiga!**







## CONTRIBUTIONS

If you'd like to enter your work (and it should be only your work!) for the Gallery section on the CD and the pages in *Amiga Format*, read the Reader Submissions advice on the CD (you can find it in various places) or simply make use of the form that can be found on the CD pages of this issue.

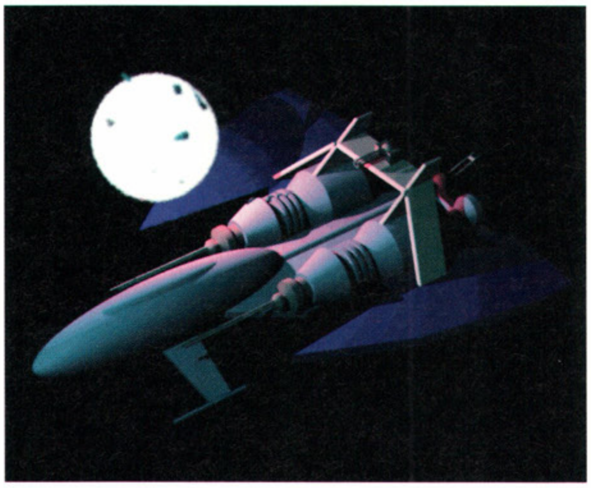






**Drago start to finish & Drago final by John Cooper**

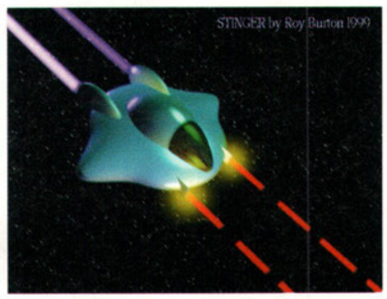
John Cooper has sent us some gorgeous illustrations. He won the gallery prize back in AF124 (June 99) for his lovely Angelion image, but has since been pipped to the post with his later submissions. Unfortunately, the same has happened again John, but keep sending us your work! As for this image, we really liked it, apart from one thing. The images used all seem to be from different resolutions – the head is blurrier than the drago head, and both are blurrier than the text on the medallions. Other than that small thing, another corking picture.



**Near Miss by Alex Timiney**

Alex's ship was rendered on his A1200 with a Typhoon 030/40MHz. He's not clear whether it was done in Real 3D 1.2, or in Cinema 4D, but in either case, the lighting and the slight blurring (in PPaint) really make the image a lot more interesting.







**Fishfinger by Mark Dowling**

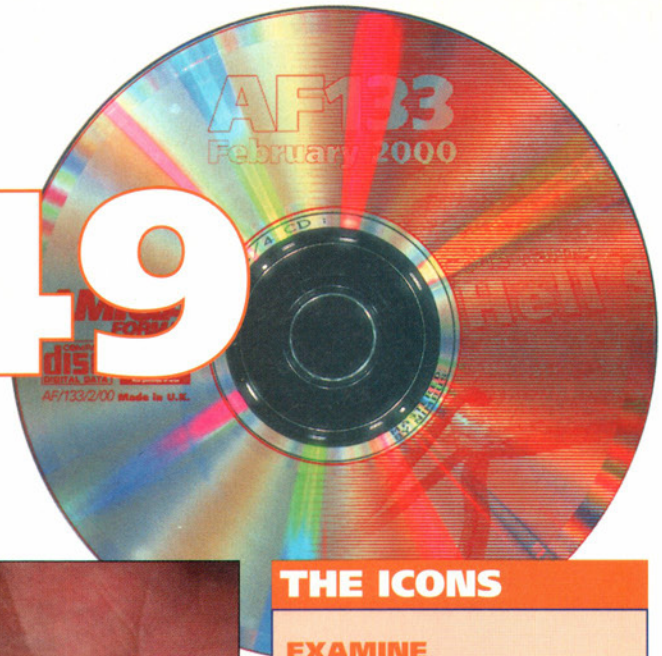
In case you couldn't tell, Mark is a big fan of James Bond. We thought we'd include his Fishfinger picture on that basis alone, but interestingly, he's gone for the old Captain Birdseye, rather than the new "hip" version, hmm...




**Spaceman, Stinger & Headland by Roy Burton**

Another 030 user and another C4D owner, Roy has brought us some great images. The Headland and Spaceman pics use the head model from Computer Arts 3D special mag that came out last year. The Stinger picture was postprocessed in ImageFX to give it a motion blur and the pulses in the beam were made by the expedient method of simply breaking up the beams with black objects laid over the top. Nice one Roy!

# AFCD 49




Another bumper sackful of goodies, but still a dearth of readerstuff – where are your contributions?

## HELL SQUAD DEMO

**-ScreenPlay-/-Commercial-/HellSquad**

Last time we had a playable demo of Digital Dreams Entertainment's excellent *Wasted Dreams*. On this coverdisc we have a demo of their sequel, *Codename:Hell Squad*. It will be instantly familiar to players of *Wasted Dreams*, featuring a similar mix of problem-solving and action, a similar control system and the similar beautifully hand-drawn locations.

There are differences, however. In *Wasted Dreams*, two players can control a character each and can co-operate or compete as is their whim; *Hell Squad*, on the other hand, is a single-player game in which you have to lead four characters all by yourself. This adds a further dimension, since some problems may be solvable only by teamwork from your men. Another change, is the camera angle: it is notably lower, giving a more side-on view of the gameplay. Perspective is taken into account, and your men shrink in size as they move into the background.







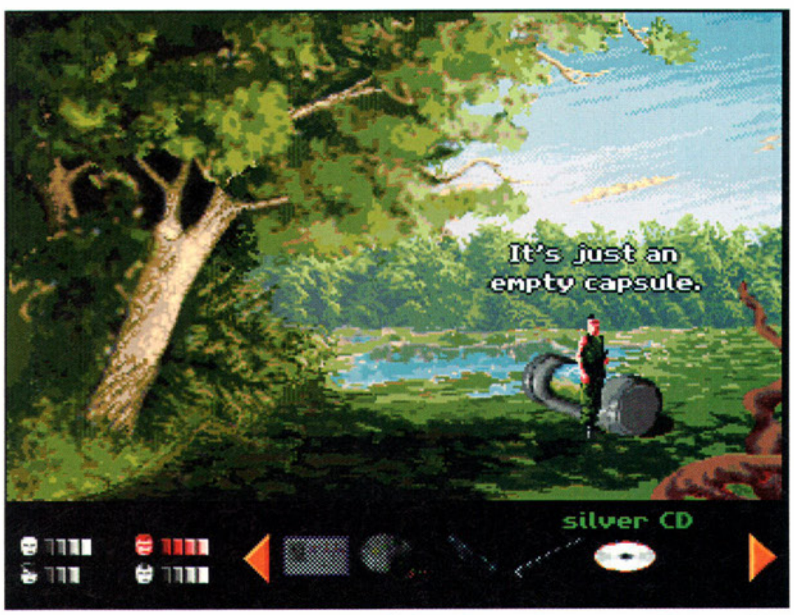
**How self-referential! You have to use a computer inside using a computer. I wonder what the story is.**




The demo does not require installation and will run directly from the CD. You may prefer, however, to drag the whole drawer to your hard drive, since this will allow faster loading. Hardware requirements are low: the demo will work on any ECS or AGA Amiga with 3M RAM.

## PLAYING THE GAME

Only one of men is active at any one time and can be moved about with a joystick or the cursor keys. You may switch between characters using the first four functions keys. When one of your men is not being actively controlled, he hibernates to regain energy. The energy status of each is shown




**If you go down to the woods today, you're in for a big surprise. You see, this tranquil setting is being disturbed by some nasty green aliens.**

## THE ICONS

### EXAMINE

**If you come across something that you can take a look at then this icon appears. Pressing fire might give you some helpful information.**

### PICK UP

**When you find an object that you may carry, this icon will appear. Press fire to pick it up.**

### USE

**If your currently activated object can be used at your current location, pressing fire will operate it for you.**

### EXIT

**You have reached the exit position for this location. Let go of the joystick and then move it in the direction of the exit to go that way.**

at the bottom of the screen and is depleted by enemy gunfire. When one of your men's energy reaches zero he dies, but you can continue the game while you still have at least one man clinging to life.

When you come across something interesting in the game, either an object you can examine or pick up, or a character you can talk to, an icon will appear in the bottom right of the screen. Pressing fire or shift will perform the relevant action. Pressing fire or shift at other times will fire your weapon. Objects that you are carrying are displayed at the bottom of the screen. An object may be selected by pressing shift and moving the cursor with the joystick or cursor key. Space will select. Pressing fire will access your inventory and allows you use an object with another item you are carrying. To use an object at other times, press Enter. All your men have access to the same inventory and so any items you are carrying are accessible to all.







**Bad guys galore and polite notices are just two things you can expect to come across in the demo of this upcoming game. They decided to leave out the naked mutant toilets in the end though.**

*This is your chance to try out the AF Gold-winning wipEout 2097 – providing you have a machine that is capable of running it*

## WIPEOUT 2097 DEMO

**-ScreenPlay-/Commercial/WipEout2097**

Last issue a pivotal moment occurred in Amiga gaming: we reviewed the first game designed for PowerPC Amigas only, *wipEout 2097*. And Paul was so chuffed with it, he gave it a gold medal.

Now's your chance to try it out, providing you have a machine that is up to scratch. The game requires a PowerUp accelerator, a 3D graphics card and at least 24M RAM. Software requirements include *CyberGraphX* or *Picasso96*, WarpOS and *Warp3D*. This is clearly a game for a select few Amiga owners, but if you have a machine capable of running it, congratulate yourself that you at last have a game worthy of its power.

The gameplay itself needs no explanation. It was such a hit on the PlayStation that I




**The trouble always starts when the autopilot stops, unfortunately.**







Continued overleaf ➡







**I am invincible. Well, I am as long as this shield lasts.**

## VBF DEMO

**-ScreenPlay-/Commercial/VBFDemo**







Who would have thought it? Another twist on the old *Tetris* theme. Never mind – this one looks great and is intensely one-more-go-ish. *VBF* stands for *Virtual Ball Fighters*. I'm sure there must be some silly plot to justify this name, but who cares.

This playable demo makes significant hardware demands, requiring an 040 machine and a graphics card, but the full version of the game, to be released by Epic Marketing, will support AGA machines as well.

The game will run straight from the CD. Just select which audio mode you would like the sound to be played in, select your desired screenmode and away you go. The demo is restricted to keyboard control only. Left and right moves the balls correspondingly, down drops them and RAlt permutates the order of the balls. I'll leave you to work out the rest for yourself.

# Your Stuff!







# £50 WINNER!

**A slightly more lively issue for reader's contributions this one. The winner this time is Jeroen van Aart for his Amoralplayer (no jokes about ethics, please), a player for 8SVX samples, modules and *MED, OctaMED, SoundStudio,* and *DigiBooster* tracks. Jeroen has submitted this to us before, but perserverance bags him the fifty quid. Okay, so the GUI needs some work and I still cannot get it to play *DBPro* tunes without crashing, but it's quite a neat little program and features all the usual CD-like controls and playlists.**

**In addition, we have the next musical instalment from Øvyin Thuv, last issues winner of the coveted reader prize. Other interesting entries are Francis Loch's *Reboot,* a simple tool to add a Reboot command to Workbench's Tools menu (guess what it does) and Arif Burhan's *Rainbow,* a simple paint package. Arif needs to do some more work on his program or at least test it more thoroughly, because on my machine it doesn't paint at all – not a handy feature for such a program – and calls the Guru regularly. Perhaps he can iron out the bugs and send it in again.**

cannot believe that you won't have all played it already. You'll be pleased to know that the Amiga version improves significantly on the original.

Read the instructions carefully before proceeding (configuring the game for your system requires some thought), strap yourself into your ship and hit the accelerator.

## POLYGLOTTANY

**-Serious-/Comms/Other/FTransAPIv1.3**

If you spend much time perusing the web, then you've probably come across websites that purport to be able to translate web pages from one human language to another: AltaVista's BabelFish, at http://bablefish.altavista.com/, and http://translator.go.com spring to mind. Wouldn't it be nice if you could use these services from your desktop without having to muck about with your web browser? Well, now you can. *FTranslate* is a tool which makes use of these sites' capabilities to translate plain text or HTML documents between any of six languages.

No installation script is provided. Just copy the version of *FTranslate* appropriate to your processor from the C drawer to your C: directory and copy the required libraries from libs/ to your LIBS: drawer. *FTranslate* may be used from the shell only, but its syntax is straightforward. Just type FTranslate with no options to get the help text. Oh, and by the way, you must be online for the system to work.

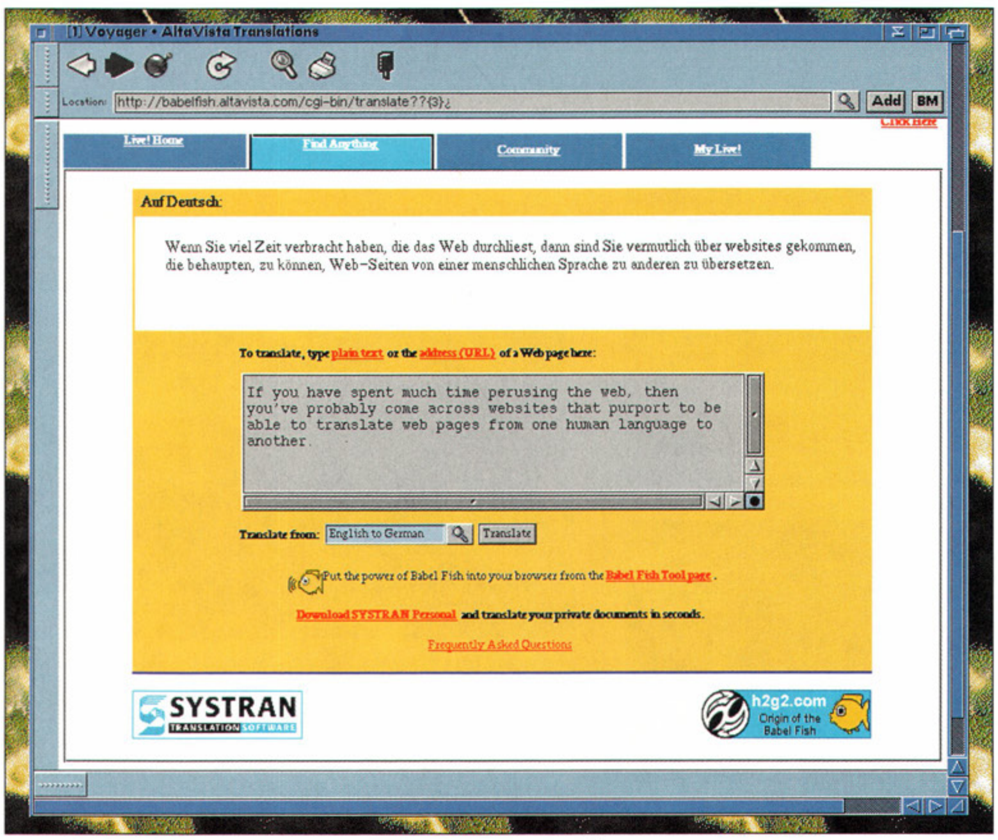
Where *FTranslate* really starts being useful is with the ARexx scripts provided. The supplied script enables *FTranslate* to be integrated with *Wordworth, FinalWriter, AWeb, iBrowse, YAM, MicroDot* and *AmIRC.*

## AT THE MOVIES

**-Serious-/Graphics**

*Amiga Format* brings you no less than four of the latest movie players for your viewing pleasure. Whether you have a 68k-only or a PPC-enabled Amiga, whether you have an AGA machine or a graphics card, whether you want to see MPEG, QuickTime or AVI movies, we have something to care of it here. In this drawer you can find the latest versions of *AMP* (or *AmiDog's Movie Player*), *Frogger, Soft Cinema,* and *akMPEG.* Remember to turn up the stero and turn the lights down low.

While we are on the subject, you might also like to have a look at *Mpeg2Anim.* This is a neat little tool that will convert MPEG movies into IFF animations. Although, IFF ANIMs take up several factors more disk space, if you have a low-powered machine you will find that you can play ANIMs far more smoothly.




**Just stick this fish in your ear, no, go on, it won't hurt. Honest.**

## LOW COST BROWSING

One part of the service offered by the *Amiga Format* CD that is often overlooked is our websites section. You can get there by double-clicking the 'Start_Here!' icon and following the websites link. By making use of this service, you can cut down on the money that you give to BT every month and instead spend more of your hard-earned cash on your Amiga.

The sites we feature here are sent to us by various webmasters around the Amiga world and are always up-to-date. On the websites page, each site is listed with a link to the web-based version and the mirror copy on the CD.




Regulars here include AmigaSoc, the UK's meta-usergroup; Haage and Partner, purveyors of fine Amiga software and developers of AmigaOS3.5; Wirenet, the UK's first Amiga-based Internet access provider; EMC, the creators of Phase X CD-ROMs; and Oliver Robert's *F1GP* site, an electronic shrine to the Amiga version of Microprose's *Formula 1 Grand Prix.*

*Amiga Format* readers are welcome to send us their sites for display here and this issue we have web pages belonging to Adam Smolarczyk, containing miscellaneous Amiga info and links to just about every motor manufacturer with a web presence.

## VAPOR UPDATES

**-Serious-/Comms/Other**

Vapor Software amaze me sometimes. They turn out new versions of their products at a prodigious rate. Doesn't Olli Wagner ever sleep?

On this coverdisc we have the latest versions of *AmTelnet II*, *Contact Manager*, *Netinfo II* and *AmigaNCP*. The first three will be good news to *NetConnect3* owners since their *NetConnect3* keyfile now allows them to use these regular updates.

*AmTelnet* is, not surprisingly, a telnet client and *NetInfo* is a general network information tool. Not terribly interesting, but incredibly useful to have around.

*Contact Manager* is their multifunction address book application, which can only store the details of all your friends and colleagues – including email, snail mail, fax and phone numbers – but can also be used to bookmark websites, ftp sites, telnet servers and IRC servers. Having everything in one central repository removes the need for a lot of duplication

*AmigaNCP* is a suite of connectivity software for Amiga owners with a Psion 3 or 5 palmtop.

Richard Drummond

## DISCLAIMER

This *AFCD* has been thoroughly scanned and tested at all stages of production. We recommend that you always run a virus checker on ANY software before running it. Future Publishing Limited cannot accept any responsibility for disruption, damage and/or loss to your data or your computer system which may occur while using this disc, the programs or the data on it. Ensure that you have up-to-date backups of data contained on your hard drives before running any new software. If you do not accept these conditions, do not use this disc.

### DISC NOT WORKING?

If your *AFCD* is defective, please return it to the address below. Please make sure you have followed our installation procedures correctly to ensure that there is no physical problem. Please send us the *AFCD* along with a description of the fault (not forgetting your name and address). A new working version should be returned to you within 28 days. The return address for faulty discs is:

TIB PLC • UNIT 5 • TRIANGLE BUSINESS PARK • PENTREBACH • MERTHYR TYDFIL • CF48 4YB

Your *AFCD* should only need replacing if the CD itself cannot be read. If you're experiencing problems with an individual application, phone our technical support line This is open between the hours of 2pm and 5pm every Tuesday.

Tel: 01225 442244 Fax: 01225 732341
Email: amformat@futurenet.co.uk
(Please remember to put "Coverdisc" in the subject line.)

Please note that the helpline staff provide assistance with technical problems directly related to the CD and cannot provide training on the software or hardware in general.

# We want your work!

You can either send it to us on floppies, Zip disks or CDs (we do take other media formats too). If you are going to send us a multiple floppy backup of your work, please use the version of *ABackup* we supply on the CD in the +System+/Tools/Disk_Tools drawer. We'll return any Zips you send us, so don't worry about getting your disks back.

If you have any further queries about how to send your software in then consult the Submissions Advice on the CD (in Start_Here!, or in the ReaderStuff or +System+/Info drawers).

Files you send this month will probably appear on *AFCD51 – Amiga Format's* April 2000 issue.

# Please tell us:

**Your name:** ........................................................................

**Your address:** ........................................................................

........................................................................

**Your postcode:** ........................................................................

**A contact number or email address:** ..................................................

**Your signature:** ........................................................................

In respect of all material which forms my reader contribution to Future Publishing's Amiga Format I hereby warrant that:-
(1) the material is original and does not infringe any other material or rights;
(2) the material does not contain any material which is defamatory, obscene or indecent and is exempt from classification under the Video Recordings Act 1984;
(3) that there are no legal claims against the material provided;
(4) that I have full power and authority to provide this material to Future Publishing.




# Serious Disk

We bring you utilities to make your computing life easier and your world just a little more colourful

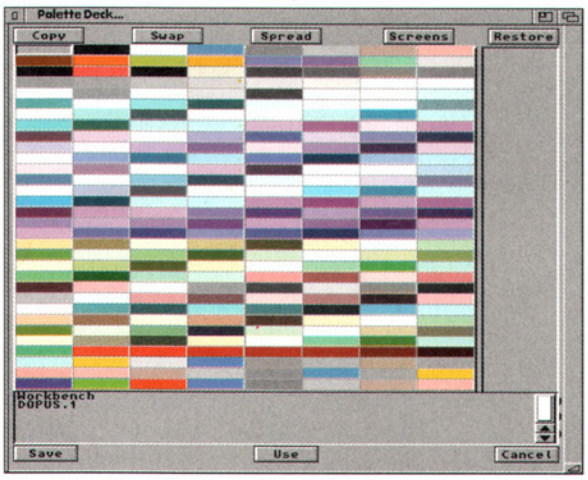
## PALETTEDECK

Do you or have you ever used a program that has a horrible default colour palette? Do any of your favourite programs have toolbars that contain horrible colour? Then *Palette Deck* should be right up your street. It is a really useful program that has been designed to allow you to change the colours of any program that runs on a custom (and in most cases not customisable) screen.

Double-clicking on the PaletteDeck icon brings up its fully scalable interface window containing buttons and gadgets to adjust the palette colours along with the "screens" button which, when clicked on, reveals a list of all available screens. Selecting the desired screen from the list results in that window popping to the front and the *PaletteDeck* window popping up on it. You are then free to tweak the on-screen colours to your heart's content. Unfortunately *PaletteDeck* doesn't allow you to save your preferred colours for a particular program but hey, at least it allows you to change them when you want to.

*PaletteDeck* has been written in CanDo and should run on most Amigas and even works happily when running on a Cybergraphics based system. It also has the ability to save its last window position and size or you can enter your prefered coordinates via the icon's tooltypes.

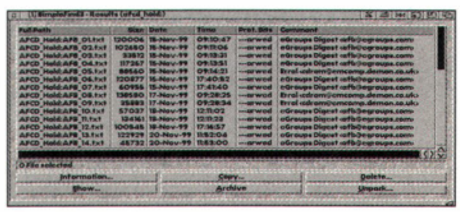
**With Palettedeck you can change and tweak the colours of your favourite programs and their toolbars to your heart's content**



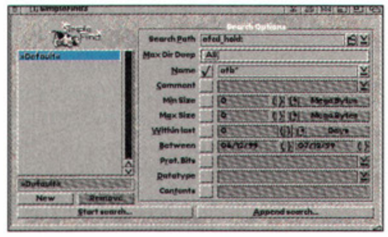

**Customise those ugly colours in your favorite apps!**

## SIMPLEFIND3

*SimpleFind* is a search tool that scans a selected directory for a specified file name or pattern and shows any matching files. You can then copy, delete, rename or view these matched files. It has the ability to search by name, comment, size, date, contents or datatype and features full AmigaDOS search patterns and can even save index files for faster searching. If this wasn't enough, *Simplefind* can also be configured to scan for files that are contained within LhA and LZX archives and it even has an ARexx port.



**Here are the search results for my AFB* search pattern.**



**SimpleFind's main interface window features all the control you should need.**

*SimpleFind* is one of those programs that does what it does very well indeed. You probably won't put it at the top of your favourite utilities list and you may not even think that it's that interesting but, in times of need, when you find yourself wasting lots of time searching for that illusive file on your nice big hard drive, it will prove invaluable.

*SimpleFind* requires at least Kickstart 3.0 and MUI must be installed on your system. Installation is simply a matter of copying the complete directory to your hard drive but depending on how you want to set it up, it may also need configuration and some common commands and obviously programs such as LhA and LZX in your system's C: directory.

Errol Madoo

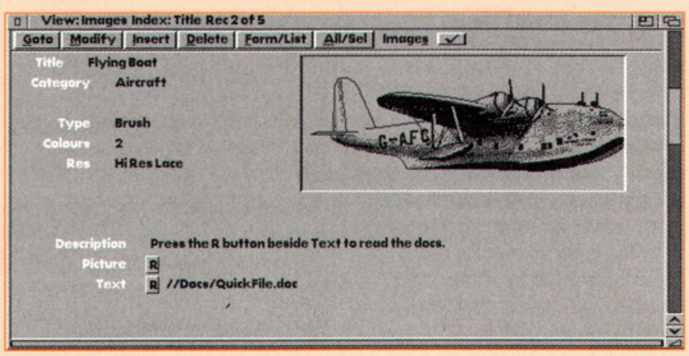
## AKJFIF

Progressive JPEG images, which load in progressive stages instead of loading and displaying the picture data in one operation, have been around for a while but the Amiga has basically lacked decent support for them. The akJFIF.datatype is a JPEG datatype, which is based on the very latest IJG JFIF sources V6b and thus it fully supports both progressive JPEGs and all the other new features of JPEG V6a. However, I must point out that although this datatype reads progressive images the actual Amiga datatype technology doesn't so progressive JPEG images will display as a single chunk as usual. Installation is made simple with the installer script and is the recommended way, but it can be performed manually if you wish.

## QUICKFILE

*QuickFile* is a flexible, flat-file database that uses random access with indices for fast access to records. Database's can be larger than the available RAM, but as much of the file as possible is kept in RAM to reduce disk accesses. *Quickfile* is very feature rich and includes printing support, picture support, multiple indexes with unique or non-unique keys, data types (character, date, time), up to 250 characters per field and 250 fields per record, online help and both form and list style displays and reports.

To get you going, there are a number of sample databases supplied so you should be knocking up your own databases in no time. *Quickfile* should work on any Amiga with at least 1M and WB2.04 or later, and some standard libraries. Installation is just a matter of copying the *Quickfile* directory to your hard drive and making sure that you have the required libraries installed.




**Quickfile is a feature rich, simple to use database program.**

# Games Disk

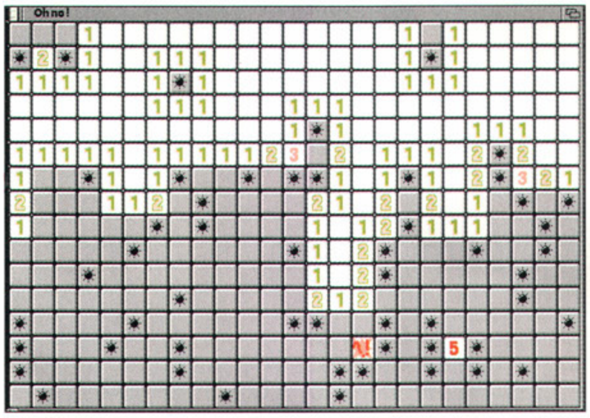



Brighten up your day by discovering hidden bombs, splatting a smile and blasting an alien into smithereens

## BOUM

*Boum* is a *Minesweeper* clone but unlike many I have come across, it has nice on-screen graphics, is pretty user friendly and perhaps more importantly, seems to be very stable. For the uninitiated, *Minesweeper* is a game played on a grid of squares and the object of the game is to get as many points as possible, by clicking on the squares. Ideally you are supposed to locate all the numbered squares without finding any mines but, in practise this is pretty hard and involves a great deal of luck. Clicking on a square will either reveal a number, representing points, or a mine. A set number of mines are randomly hidden underneath certain squares in the play area. Find a mine and the game is up.

*Boum* runs on your Workbench and features menus allowing you to configure the play area grid size, the difficulty and even the sound effects used by the game. If you don't like the sound effects supplied you are free to use your own. *Boum* requires an Amiga with OS3.0 and a 68020, or better. It should even be playable on a two-colour Workbench screen, but it is recommended that a screen with more colours is used. Depending on your workbench backdrop, a 32-colour screen should be okay as the game, by default, uses just 11.

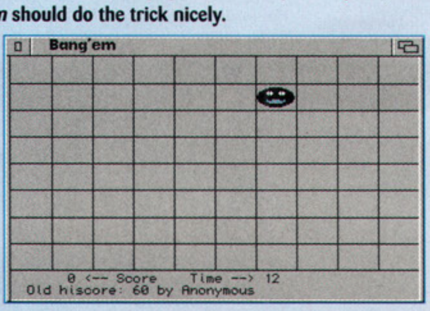



**Guess what I found... Boum is annoyingly addictive!**

## BANG'EM

**_Bang'em_ is a brilliant little game that's so simple to play it almost needs no instructions. In fact, the only real instructions needed are: double-click on it's icon and then click on the smiley faces as fast as you can. The game opens up in its own window on Workbench and is played against the clock and the object is to click on as many smiley faces as you can as they pop up randomly in the _Bang'em_ window.**

**You are free to set the time limit but be warned, if you think that this is a way of getting better high scores you can think again as the score is relative to the amount of time that has been set. Installation is a breeze, simply dragging the _Bang'em_ directory to the desired location is enough. If you want to give your mouse a real good workout or need to pass some time while you are waiting for a download or backup (you do backup don't you?) to finish, _Bang'em_ should do the trick nicely.**




**Bang'Em is simplicity itself to play and is soooooo addictive!**

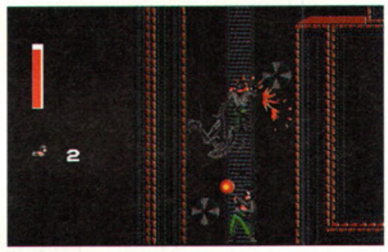
## KILLEMALL

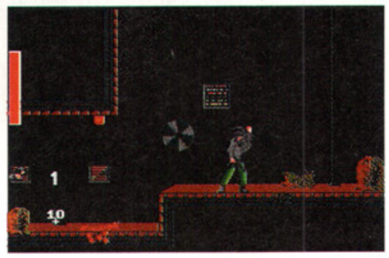
*KillEmAll* was originally written in only three weeks way back in April 1997 and since then Alastair has been steadily improving the game until its release recently. Basically,

> I could hear alien noises, I could see my blood spilling out all over the place as I was dying but I couldn't see my alien attacker anywhere

*KillEmAll* is a fast one or two-player platform shoot-em-up similar to, and probably based on, the *Alien3* game except that Alastair's game contains loads of artificial intelligence and much more detail – at least this is what Alastair claims and since I never played *Alien3* I can't really comment on this.

The entire game is played with a joystick but on some occasions you will also need to use the spacebar (or the left/right AMIGA keys for two-player mode) to activate the various switches and levers. The game is pretty straight forward to install and is really only a case of copying the game's fonts to your fonts: directory and making sure that you have the the required libraries present in your system's libs: directory. The game includes several levels and once you have completed the supplied ones you can register the game for the meagre sum of £6 and you will receive loads more from Alastair.

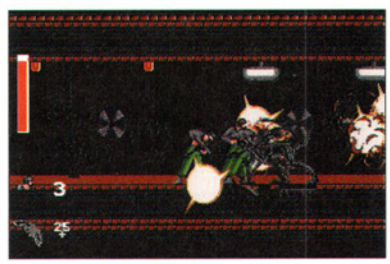




**These aliens not only suck face but they'll happily suck the life right out of you.**

If I were to grumble about anything in the game, it would be that the graphics are a little too dark. I realise that Alastair was probably trying to adhere to the dark and moody feel of the *Alien* films, but I was getting killed almost immediately in the game and couldn't figure out why. I could hear alien noises, I could see my blood spilling out all over the place as I was dying, but I couldn't see anything attacking me. Then it dawned on me that it could have been the brightness on my monitor so I turned it to full and there it was, the flying alien creature that was responsible for my almost instantaneous deaths.

Errol Madoo



**Sometimes, extra soldiers will rush to join the fight, and you can hide behind them!**

## DISK NOT WORKING?

**We take every care to test the coverdisk software, but Future Publishing cannot accept any responsibility for any damage occurring during its use. If your disk is faulty, send it back with 2x26p stamps and an SAE to:**

**AMIGA FORMAT (insert name of disk) • TIB PLC • UNIT 5 • TRIANGLE BUSINESS PARK • PENTREBACH •MERTHYR TYDFIL • CF48 4YB**

**If there is a manufacturing error then the stamps will be returned with a replacement disk.**




# Free! Reader Ads

Buy, sell and exchange your Amiga hardware and software in the best free ads pages around

## FOR SALE

**Blizzard 1230/50MHz with 4M RAM £50. Also** 170M 2.5" hard drive with cradle and lead £50. ☎ 0116 244 8939 or email hasen@ukonline.co.uk.

**Amiga 1200 tower, Zorro board, 34M RAM, 6.5G** hard drive, Blizzard 1230 accelerator, 16x CD-ROM drive, XL 1.76 floppy, WB3.1, midi interface, Microvitec monitor, 65 CDs £380 ono. Email Mark East: markxyz13@netscape.net.

**A1200, Micronik tower, Blizzard 603e, Blizzard** vision card, 16M CD-ROM drive, Epson Stylus colour 200, 15"monitor, speakers, joystick, joypads, games, AFCDs, 56k modem £400. ☎ Paul 01302 370739.

**Amiga Format CDs complete except for number** seven (1-46) plus 35 other CDs. I would like to sell as a complete set – open for offers. I live in Germany but will be in Ireland in early 2000. Email MMcClean@t-online.de.

**A1200, Blizzard 1260 accelerator with SCSI, 32M** RAM, 2.1G SCSI disk and SCSI CD-ROM in external case, 3.1 ROMs, Workbench 3.1, mouse. Excellent condition, £300 plus postage & packing. Email mark@storagedirect.com.

**A1200 tower Power PC 160/060, 64M, 1.7G hard** drive, 8x CD-ROM, 2x floppy, 1084s monitor, buffered interface, Rendale Genlock, hand scanner, Canon BJ 200 printer, Turbo Print. Bargain at £625, ono. ☎ Paul 01377 241602 after 7pm.

**Buy my stuff! A600 motherboard, £30. A600 2.05** ROM, £20. 3.5" hard drive, 170M with WB, partitioned, formatted etc, £40. ☎ Alan 01429 872066. Buyer collects or pays postage.

**A1200 hard drive, 6M RAM, second disk drive,** CD-ROM, monitor, printer, mouse, joystick, manuals, loads of games, floppies and CDs. £150, buyer to collect. ☎ 01425 611725.

**Apollo 040 25MHz A1200, 16M. Unwanted** present cost £179, will accept £110. ☎ Barry 07808 496474 or 07932 871434.

**Lightwave 3D (v3.5) original, boxed, manual,** dongle, £35 plus £3 p&p. 64M 72-pin SIMM, 60ns double-sided. Cinema 4D (v4) CD-ROM, manual etc, £50 including p&p. ☎ 01405 860798.

**Canon BJ10ex Bubblejet printer for sale complete** with PSU and manuals, £25. Also A600/A1200 Commodore PSU good condition, 325. ☎ David 01287 660141 evenings after 6pm.

**Original software with manuals. Includes:** Wordsworth Office v5, Wordsworth v7, Personal Paint v7.1, NetConnect 2 and 3, STFax Professional v3, Photogenics, DOpus Cinema 4D, Doom trilogy, complete set of CU Amiga CDs etc. ☎ Dale 01942 203149 after 6pm or email dale@hurst.prestel.co.uk.

**CD-ROM drive for sale brand new £50 ono.** Internal hard drive 80M plus floppy instruction, £30. You pay p&p both items. Please reply to Amiga User, 8 Alan Close, Dartford, Kent DA1 5AX.

**Various Amiga bits, VIDI (Amiga) 12 full A1200** support version 2, boxed. EZ IDE 4-way buffered interface registered with software. PC keyboard interface. Any offers. ☎ Frank 01258 452361.

**OS3.1 ROMs, all manuals, disks £20. OS3.0** manuals, £2. External floppy drive, boxed, £8. Oscar CD £1. 1200 keyboard, cover, shield, £2. Offers for all. ☎ 02380 333599 or email adam@bargatetv.demon.co.uk.

**A1200 030 8M RAM, 200M hard drive, black and** white printer, some software, £150. ☎ 01302 820134.

**A1200, 120M hard drive, 4M RAM, external floppy** drive, manuals, £120. 4x CD-ROM player £40. Pro-Grab 24RT boxed, £45. Lola Genlock, £45. ☎ Eric 01484 714864 (Huddersfield).

**A1200, 2.1G hard drive, 8 speed CD-ROM,** 1230/40 accelerator with 20M RAM, 56k modem, extra floppy drive, IDE 4-way interface Star printer, Goliath PSU, software including NetConnect 2 and 3, IDEfix, Wordworth, loads of extra mags, CDs, spare 1200s, 4M expansion board plus much more. £300 ono, will not split. Email royst@exl.co.uk.

**A1200 in full tower, DIY project, 10M RAM, 250M** hard drive, 8x CD-ROM, Blizzard 1230/50 IV accelerator, PC keyboard, 14" multisync monitor, loads of CDs/software, Citizen ABC colour printer, £250. ☎ or fax Craig 01343 547911. Email craig.charlton@virgin.net.

**Amiga 1200 with box, 60M hard drive, nine** binders of Amiga Format/Amiga Shopper, lots of games. Some serious Hi-Soft dev pac software, Amiga ROM kernel manuals and instruction books. Make a reasonable offer. ☎ 01258 450484.

**Blizzard 1230-IV, 50MHz, accelerator with 8M** RAM, £50 ono. 1.2G hard disk including A1200 installation kit, £50 ono. ☎ James 01779 475844. Buyer collects or pays postage.

**Compaq external SCSI 2x speed CD-ROM, £45.** Also Toshiba hard disk drive 2.5" 85M. Includes IDE cable, £25. ☎ David 01287 660141 after 6pm.

**A3640 board, 25MHz 68040. Full chip with FPU** and MMU. Fits A4000 or A3000, £50. Basic A1200 no extras, £50. A4000/40, 25MHz 18M, CD-ROM, 850M hard drive, full tower case, £450 ono (£500 with spare A4000). ☎ 01978 362874 or email ian@hopkins64.fsnet.co.uk.

**A4000/030 desktop outfit. 8833/2 monitor, 130** hard, 20M RAM, CD-ROM, two trackballs, mouse, colour 24-pin printer, Workstation, s/chair, masses of software, £200 ono. ☎ 0208 5080584.

**525M Toshiba 2.5" hard drive cable including** Internet software, Wordworth 7.0, DPaint 5.0 etc. £45 including postage and packing. ☎ 01762 344641 or email willpower@odene.freeserve.co.uk

## WANTED

**Squirrel interface. Must be in very good condition.** Email davemcglynn@messages.co.uk or ☎ 01606 590257.

**Cybervision PPC graphics card. Willing to pay up** to £100. Also wanted 486 Bridgeboard. ☎ Warren 01554 775833 (Wales) after 6pm.

Amiga 4000/030 or 040 desktop computer in perfect working condition. Demo required if possible. ☎ 0208 65678 or email eddkensing@aol.com with specification and price.

Bvision 8M GFX card. Prefer with CyberCFX 4+ but not essential. Money waiting for best offer. ☎ Colin 01759 303702 any time.

Scala Echo 100, the hardware or unit with a Lance and infra-red sensor. Will pay a good price. Please write to: J G Madsen, Rahbeks Alle 2 A, DK. 1801 Frederiksberg C, Denmark.

Player Manager 1 and Kick Off 2 data disks, Giants of Europe and Super League. ☎ Matthew 01895 832472.

Squirrel interface wanted. Email darren@crown.free-online.co.uk.

Manual and software for Commodore MPS 1270A ink jet printer. ☎ 01555 663992.

Desperately seeking some old Amiga 500 titles: Fuzzball and Super Putty (system 3), Hawkeye, Creatures, Mindroll, Venom Wing and Armalyte (Thalamus), Damocles, Mercenary 1-3 and Backlash (Novagen). ☎ Andy 01642 760930 or email arlizard@hotmail.com.

## PERSONAL

***Also see the AmigaAngels document on our CD.***

Please email me for details on how to receive my list of providers of free web mail. Grenville gpdixon@excite.com.

If you are a novice or experienced Amiga user and have a problem, we have user group presidents from around the world and hand-picked specialists who are willing to help you out. Email AmigaSupportService@Onelist.com.

Leading non-print Amiga magazine, AIO, requires new writers to contribute reviews, articles or other help. For more information email aio@aio.co.uk. Anyone considered.

Website, HTML and FTP help given for beginners to get you started in designing and uploading web pages. Contact webhelp@badger.org.uk or see my site at http://www.badger.org.uk/webhelp.

I am an Amiga artist/musician wanting to do graphics or music for your PD, shareware or games. Highly proficient with OctaMED's SoundStudio and Deluxe Paint. Both AGA and standard Amiga formats. ☎ Vivian 001 505 835 2841 (New Mexico).

Any Amiga users new to the Internet who want some free links/galleries and downloads to get them going can go to my site at: http://www.g251273.freeserve.co.uk or email me (Paul) at: pol@g251273.freeserve.co.uk.

Any Amiga magazines or disk magazines require another contributor? I have knowledge of A1200 and other Amigas. Will work for free. Article previously published in *Amiga Format*. ☎ Ross Whiteford 01738 850732.

## BBSes

Bedlam BBS, Leicester, online 24 hours. ☎ 01162 787773.

The Forum! BBS online 24 hours, Kilmarnock, Scotland. Over 35 members, 2,000+ files available, including games, pictures, utilities, etc. 36K. Sysop: Jamie Maguire. Run by a software development student. ☎ 01563 540863.

Promised Lands BBS, online 10pm-9am 24Hrz weekends. Sysop: M!k. Umlimited downloads, online CD-ROM speeds up to 33K. ☎ 01562 66829. Email mik@plbbs.fsnet.co.uk.

Arachnoids BBS. Leicestershire Online 24hrs. ☎ 01509 551006. Friendly sysop, over 10,000 files online. No ratios, everything free. Ninja@Arachnoids.freeserve.co.uk.

Dirt Tracker BBS – the headquarters of Powernet Mail network, hubs and nodes and points available on request. Help package available. One of the UK's no.1 leading BBSs with a friendly attitude. ☎ +44 (23) 8036 5112, 24 hours.

Quest BBS, Wakefield. West Yorkshire's largest BBS with over 30,000 files online, including the latest seven Aminet CD-ROMs. Online weekdays, 6pm-6am and weekends, 2pm-6am. ☎ 01924 250388.

Entertainment BBS, Wigan, online 24 hours. ☎ 01942 221375.

Bobbs, ☎ 01243 371644, online 24 hours. Based in Hampshire, south east, host for Powernet. Loads of files, home of BullRPG, The best Amiga Lord clone. Speeds up to 56K.

Skull Monkey BBS, Lincoln. Online 24 hours. ☎ 01522 887933. Friendly sysop. Email sns@skullmonkey.freeserve.co.uk – keeping the Amiga alive.

Want to chat about anything and everything with people all over the globe? Then join Fluffynet – the fluffiest Fido-style BBS mail network! ☎ Total Eclipse BBS, +44 (0) 870 740 1817 or visit http://www.fluffynet.n3.net for information on how to join. Hubs and nodes available. Anyone welcome!

TABBS 2000 BBS, online 24 hours. Running Xenolink v2.8, Amiga sysop with over 15 years of Amiga experience. 20,000+ files online. File requester. Amiga support given. Hertfordshire. ☎ 01992 410215, email sysop@tmbbs.freeserve.co.uk.

Total Eclipse BBS, ☎ +44 (0) 1983 522428, 24 hours. 33.6K, home of Liquid Software Design and MAX's Pro support.

Elevate BBS, Hants, online 24 hours. ☎ 01329 319028.

Moonlight BBS, Bedford, online 6pm-8am, 24 hours at weekends, ☎ 01234 212752. Sysop: John Marchant. Email gnome@putnoe.u-net.com.net Official Transamiga Support BBS, unlimited downloads, friendly sysop with excellent knowledge. Aminet online. Run by an experienced Amiga programmer who will help you out for free.

Maverick BBS +44 (0)1273 233008 24Hours Max 1.54, 57600 cps. Gamez, adultz, utilities and more. Very friendly sysops and staff. Powernet Hub: 14:100/102. Powernet points availalbe. Email adey@mavericksbbs.freeserve.co.uk.

Zodiac BBS, Hants. Online 11am-7pm 7 days a week. ☎ 01243 373596. Sysop: Destiny Co. Sysop: Axl. Running Maxs Pro v2.11, Hellnet. Lots of files.

X Zone BBS, supporting the Amiga for over two years. Do you want the latest files? ☎ 01635 820590, 6pm-1am, modem callers only (33.6K).

On The Oche BBS, Waterlooville, online 24 hours. ☎ 01705 648791.

## USER GROUPS

Help needed in setting up new Amiga User Group. All ages welcome, non profit-making, not a business. Northern Ireland area. ☎ 01762 331560.

NAC, Nottingham Amiga Club. Users of all ages and abilities welcome. From A500 to A4000 PPCs to 68Ks. Club meetings last Saturday of each month. ☎ Mark Sealey 0115 9566485 anytime.

French speaking Amiga club. PD disks, help, buy-sell, advice. Also specialists in 8-bit emulation. Please write to BP 120, 4000 Liege 1, Belgium. Please, no PC!

Looking for somewhere to chat with other friendly and helpful Amiga users? Then why not visit #amIRC on Undernet. #amIRC has established itself as the no.1 Amiga chat channel. We are the offical Amiga help channel on Undernet. Everyone is welcome. Visit our website at: http://surf.to/amirc.

Amiga North Thames meet on the first Sunday of the month at St Mary Magdalene Vestry, Windmill Hill, Enfield, 1-5pm. Software/hardware problem solving, demos, news and Amiga games. ☎ Mike 0956 867223 weekends or email Ant.london@ukonline.co.uk.

New user group being set up called TAG (Total Amiga Group). Initially in the Somerset area. ☎ Phil 01458 832981.

Are there any Amiga users in Birmingham who want to set up a user group? ☎ Hitesh 0121 6056452.

NPAUG is a new Amiga user group based on the net. We offer a free monthly magazine and tech support over the web. If you are interested in joining, visit our website: http://members.aol.com:/npaug/home.html or email me: npaug@aol.com.

Need a new IRC chat channel? Come to #PoweredByAmiga on ARCNET for fun and informative chat about Amigas and otherwise. Visit our URl at http://www2.prestel.co.uk/amigav/PBA/. We mostly meet at weekends about midday.

Are there any Amiga users in Cornwall interested in starting a user group in the Helston/Falmouth area? If so, email frank@massin.freeserve.co.uk or ☎ 01326 573596 and ask for Frank.

**Continued overleaf ➡**

➡ **Amiga Club International members receive a** bi-monthly magazine disk and PD programs plus helpline. Recently relocated from London, Falloden Way to Dover. Established 1989. ☎ 01304 203128 or email robroy@catdtp.freeserve.co.uk.

**Felbrigg Amiga Group meets weekly near** Cromer. We are a group for novice and expert users. For more information ☎ 01263 511705 or 824382.

**Amiga Support Association. We offer help, advice** and a friendly chat. Monthly meetings, tutorials and a fact file are all available. To join our mailing list send a mail to Amiga_SA-Subscribe@egroups.com. Contact Phil: Snood@ukonline.co.uk ☎ 01703 464256 or ☎ Paul 01705 787367 for more information or visit http://www.btinternet.com/~philip.stephens.

**Is there anybody in the Northamptonshire area** interested in starting up a new user group? Please contact me: ☎ 01536 724309 or email nsthomas@ukonline.co.uk.

**Great Yarmouth user group. Anyone interested in** joining this user group please contact John. ☎ 01493 722422.

**South West Amiga Group, (SWAG) meets every** first Thursday of the month, 8:30pm at the Lamb & Flag (Harvesters), Cribbs Causeway, Bristol. SWAG intends to get Amiga users together, provide info and support, promote the Amiga and have a laugh. Contact Andy Mills: Swag@wharne.u-net.com.

**Are you Welsh, live in Wales or love Wales? Then** join Cymru Amiga User Group. Visit us on http://bounce.to/caug or email dark.lords@deathsdoor.com to join.

**Would anyone, anywhere like to join the Amiga** Free Helpline? If so see AFCD46:-ReaderStuff-/Terry_Green/ or ☎ Terry 01709 814296 (Rotheram) for more details.

**Deal Amiga Club welcomes all old hands and** newcomers alike, whatever your ability. Admission £1, under 16's 50p. Annual membership is now free. If you've bought some bits and don't know how to put them together then bring them along and let us help. ☎ 01304 367992 for more information or email superhighwayman@hotmail.com.

**Medway and Maidstone Amiga collective. Meets** monthly. Advice at all levels. ☎ Dave 0961 809466.

**West Lancs User Group. Sundays, 1pm-4pm at St.** Thomas School Hall, Highgate Rd, Upholland. ☎ 01695 623865, email ralph@twiss.u-net.com. Help and advice, novices and experts welcome.

**New Amiga sound and demo association seeks** input, contacts and support to form a user group based around the Amiga music and demo scene. Interested? ☎ Dave 01243 864596 or 0961 985925.

**Power Amiga User Group based in Portsmouth for** users of all ages and levels. We meet once a month on the last Saturday. We have all sorts of Amigas, prize draws, tutorials and general discussions each meeting. ☎ Lee 01243 779015 (weekends only) or email LeeScott@free4all.co.uk or visit http://www.poweramiga.freeserve.co.uk.

**Workbench, the Manchester Amiga user group,** meet on the first Thursday of each month at 7.00pm and offer general Amiga chat. ☎ 0161 839 8970. Also, check out our website at: http://www.workbench.freeserve.co.uk Or email: mail@workbench.freeserve.co.uk.

**SEAL meets twice monthly at Northlands Park** Community Centre, Basildon, Essex. We offer help, tutorials and presentations plus scanning, printing and email. Contact Mick Sutton, 20 Roding Way, Wickford, Essex. ☎ 01268 761429 (6-9pm). Email seal@thunder.u-net.com or visit our website, http://seal.amiga.tm.

**Huddersfield Amiga User Group (HAUG) meet on** the first and third Wednesday of every month at The Commercial Inn, Market Street, Paddock, Huddersfield from 7.30pm onwards. ☎ Geoff (01484) 322101 email geoff@geemil.demon.co.uk or visit http://websites.ntl.com/~paul.4/index.html.

**Northern Ireland user group welcomes new** members. Emerald Amiga Users meets regularly in Strabane. ☎ Charles Barr 01504 884700.

**United Amiga/Amstrad User Group (UAUG)** established 1986: Largest user group for Amiga and Z80/6502 8-bits. 40 page magazines, cover disks (tapes), digitising, scanning, helplines, email service, Internet book search. Free gift upon joining. Send SAE for details to: The Editor, 13 Rodney Close, Rugby CV22 7HJ or email uaug.s@ukonline.co.uk.

**Join a new email club for Klondike, a Reko** Productions game. Cardset creators and cardset collectors, Amiga and PC. Email kevin@reko.karoo.co.uk (make friends).

**Want the latest reviews, news, interviews,** articles? Then visit the NEW AIO website at http://www.aio.co.uk, or visit #amos on ircnet, Saturday 9pm-midnight.

**Pennine Amiga Club. Free worldwide helpline** supporting all models. Non profit-making club. Not a business. We help with free advice. ☎ 01535 211230.

**Coventry and Warwick Commodore Computer** Club (CWCCC) meets once a month on the first Wednesday at Earlsdon Methodist Church, Coventry. Email luke.stowe@ukonline.co.uk or visit http://ukonline.co.uk/luke.stowe/cwccc/index.html

**Interested in Internet Relay Chat? Why not visit** #Amigazone on Dalnet? We are a friendly bunch and meet at 10pm every day. Visit our website at: http://www.tsd-ltd.demon.co.uk

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# South Essex Amiga Link



## Put your flippers together for the user group that has a fishy sense of humour

SEAL, or South Essex Amiga Link, are an Amiga user group quite unlike any other. They have taken all the things required to make a successful Amiga user group: a dedicated core of regular members providing a wide Amiga knowledge base, a comfortable, but not lavish, meeting venue, regular meetings featuring software and hardware demonstrations and mixed them all together with their secret ingredient, a sense of humour Monty Python would be proud of.

SEAL currently consists of about 35 members with approximately 15-20 turning up for any one of the twice monthly meetings. Meetings are held in the Northlands Park Community Centre, Felmores, Basildon and SEAL members are particularly proud of the bright yellow decor and hot air balloon motif curtains!

One of SEALs great assets is the diversity of knowledge their members can provide. If one member is having difficulty with a particular piece of hardware or software he can bring his machine along to a meeting and the chances are that someone there will be able to fix the problem. In fact I found myself spending the first half of the meeting helping chairman Mick (Sicky) Sutton attempting to fix a secondhand A1200 that refused to display Workbench in any more than 16 colours. Two hours later, and although we had reinstalled the OS and completely disassembled the machine, we were still no nearer to finding the cause of the problem. Although we were unable to solve this one during the course of the meeting Mick later contacted me via email and told me that finally they had tracked the problem down to a faulty motherboard.

Over on the other side of the room *wipEout2097* was being put through its paces on Robert Williams A4000 and, judging by the interest it was generating, it appeared to be meeting with approval.

During the course of the meeting Robert Williams gave a half hour's demo of OS3.5. Although it's been widely covered in magazines and on the Internet, Robert somehow managed to find a number of small but useful gems to demonstrate that were so far unknown to me. SEAL features regular product demo's and tutorials such as this at their meetings and they provide invaluable information to members of SEAL in helping them to get the best from a product or even to decide whether to purchase it or not.

**To give an example of the warped sense of humour of SEAL, their magazine uses dead fish as a rating system for products they review**



**Partners in crime, the SEAL clan pose for a publicity shot.**

In addition to the meetings, SEAL also have their own magazine "*Clubbed*" which is written and produced by members of the group. If the title of the magazine hadn't already given you a hint at the warped sense of humour of some of these guys then a look at the rating systems they use will convince you. While most magazines use percentages or marks out of 10 to rate a product, *Clubbed* uses dead fish! A top score earns the rating "Caviar" and a shiny fish, whilst a bottom score finds itself being labelled "Rotten" and attracting decomposing fish bones. Not to be mistaken for a mere user group newsletter or fanzine, each issue of *Clubbed* weighs in at approximately 40 A4 pages. While *Clubbed* isn't in the same league as professional publications such as *Amiga Format*, and makes no such pretensions, it provides another fascinating angle on Amiga-related events and is an asset SEAL are justifiably very proud of. *Clubbed* is produced four times a year and the latest version should be available from SEAL by the time you read this.

SEAL was formed just over a year and a half ago and is still going from strength to strength. As I said last issue – and my visit to SEAL has reinforced this view – as long as there are user groups like SEAL out there the Amiga will never die.

**Chris Livermore**



**Mick Sutton helps a SEAL member diagnose a tricky hardware problem.**



**Robert Williams demonstrates OS3.5.**

## CONTACT DETAILS

**Meetings are held in Northlands Park Community Centre, Felmores, Basildon every other Friday. Check out the website at http://seal.amiga.tm/ or phone Mick Sutton 01268 761429 before 9pm.**
**Email sicky@btinternet.com.**

## Lost Souls Form

**No user group near you? Then fill in this form and send it to: User Groups • c/o Amiga Format • 30 Monmouth Street • Bath • BA1 2BW.**

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**Telephone**......................................
**Email** ..........................................
**Address** ........................................
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**Postcode*** ......................................

***You must fill in your postcode as this is used to calculate how far from other Lost Souls you are.**



Wolf Dietrich
phase 5 boss man

# Just the FAQs

Everybody's favourite hardware developer speaks out about his formative experiences with the Amiga

*Amiga Format* has had a long relationship with phase 5 ever since we reviewed their first A1200 product (the Blizzard 1200) back in *AF50*. Since we're looking forward to reviewing their G4 accelerator in the very near future, we thought that managing director Wolf Dietrich would be an ideal and timely addition to this page right now.

**■ When did you first use an Amiga?**
Together with my partner at phase 5, I was sitting in front of the first Amiga 1000 that had been imported to Europe by an editor of an Atari magazine in 1986... with open mouths we were sitting in front of the bouncing ball and the game *Mindwalker* in a basement room somewhere in Frankfurt.
I bought my own A1000 at the beginning of 1987.

**■ When did you decide to get involved in the Amiga market on a business level?**
I started to write as an author for Germany's first Amiga magazine called "*Kickstart*", in 1986, and have been in the Amiga market ever since. While at this magazine, I got in contact with my partner Gerald Carda, who is the Technical Director of phase 5. So, we can call ourselves real Amiga veterans.




The first generation PowerPC cards started the migration towards faster processors that the G4 will accelerate.

**■ How did you get the idea for the G4 accelerators?**
The G4 was the only logical step. This new processor provides some significant innovation and, together with a major software innovation such as the QNX Neutrino OS, it can be a multimedia powerhorse.

**■ What are you working on now?**
Besides the G4 hardware (that includes the Cyberstorm and Blizzard G4 as well as our G3/G4 multiprocessor boards and some other stuff), we are working on the realisation of our concepts for an Amiga successor, which we call the Amirage K1 and K2 computers.

**■ What's the one Amiga peripheral (software or hardware) that you wouldn't be without?**
The CyberstormPPC and the CyberVisionPPC in my A4000 – without those, my productivity would be significantly limited.

**■ Who is your Amiga hero and why?**
Well, actually the story of the Amiga is not so much filled with heroes. The original team around Jay Miner would be the only ones I would consider to be Amiga heroes. They had a very special vision, and they invented new technology for their time. They are the fathers of the Amiga.

**■ What's the one piece of software or hardware you wish you'd had the idea for?**
There have been extraordinary products in the past, such as the LIVE! digitizer or the NewTek Videotoaster. But some of these products are history already. In former companies I worked for, there were also some similar stunning developments, such as a bluebox, which was very innovative at the time. Today, there is not as much room for significant innovation. But, we believe that the G4 processor and our multiprocessing systems, as well as our concepts for distributed computing, are among the innovative and stunning new products to come, as they will open new doors and help to realise new applications.

# afb amiga format bulletin

## If you're spending too much time and money at your local then try a virtual pub where the regulars are always friendly

**Every issue the afb page will be written by a different member of afb. Fancy a go?**

Do you go to the pub? If you do, carry on reading. If you don't, we'll assume you do and you can carry on reading anyway. Those of you who visit pubs may be able to imagine the following scene a little better than others (those of you who don't due to a disliking of alcohol/a disliking of smoky atmospheres/a disliking of stuff in general can replace the pub with… I don't know, a Women's Institute meeting or something.

You've been invited along to a pub (or Women's Institute) to meet and socialise with a group of like-minded people. Not knowing anyone else who's into the things you are, you've gone along to see what it's like. But you're a little nervous – you don't know the area, you don't know the people. For all you know it could be really rough, the people might be hostile and the beer (or tea) might be foul "yellow water". Seeing a large (make that extremely large) group of people huddled in a corner – it's a very big pub or ( …you get the idea) – you approach and ask cautiously: "Hi. Um, are you lot afb? I'm new here and I thought I'd drop in and see what it was like." Thankfully, you are greeted by a host of friendly people who are talented, knowledgeable, witty and even just fun to listen to. That's afb.

I turned up one day and haven't wanted to go home since. Yes it was daunting listening to so many people at first, and many people have complained that no one ever talks about what they want to talk about, but there are so many interesting and funny and informative things being said that I really wouldn't like to miss any of them. Okay, so occasionally an argument might become quite loud and intrusive. Some of the most-heated involve the oft-mentioned Matt Sealey, who sits in his own corner refuting all claims that he is part of the "community". Even then, no one gets slashed with broken bottles and only very rarely does someone get thrown out.

With the staff of *Amiga Format* moving from table to table (or in the case of Evil Rich Drummond, moving through tables) and even the odd visit from the rival establishment next door, the whole atmosphere is one of general good-will and merriment. You have problems? You have questions? Then ask! There's no need to feel ashamed here. The likelihood is that it's not just you who'd be interested in the answer. You may ask a question only to find everyone else is looking in your direction; before you know it they're joining in and adding their tuppence-worth. Opinions? We have hundreds! It's always good to get a new viewpoint on things and if you're thinking of buying Amiga-related hardware or software there's bound to be someone who can recommend it or warn you away. Don't be scared. Likewise, don't dismiss it out of hand. If necessary have a look on the web first, see if you like the place through one of the windows. If you don't, you have no idea of what you're missing out on. This isn't just for the few who regularly visit and immediately have something to say, afb is for every single one of the 850 people or so who go there just to listen. All the management ask in return is that you participate in their surveys when they do one. So pull up a chair, sit yourself down and tell us about yourself.

James Potter

## GETTING ON AFB:

**You can subscribe to the afb by going to the following website and signing up:**
http://www.egroups.com/group/afb/

**If you just want news on when the next issue of *Amiga Format* will be out, we offer that at:**
http://www.egroups.com/group/afb-announce/

**It's worth joining both lists since they each offer unique things and the announce list usually only has one email every four weeks.**

## RULES AND REGS:

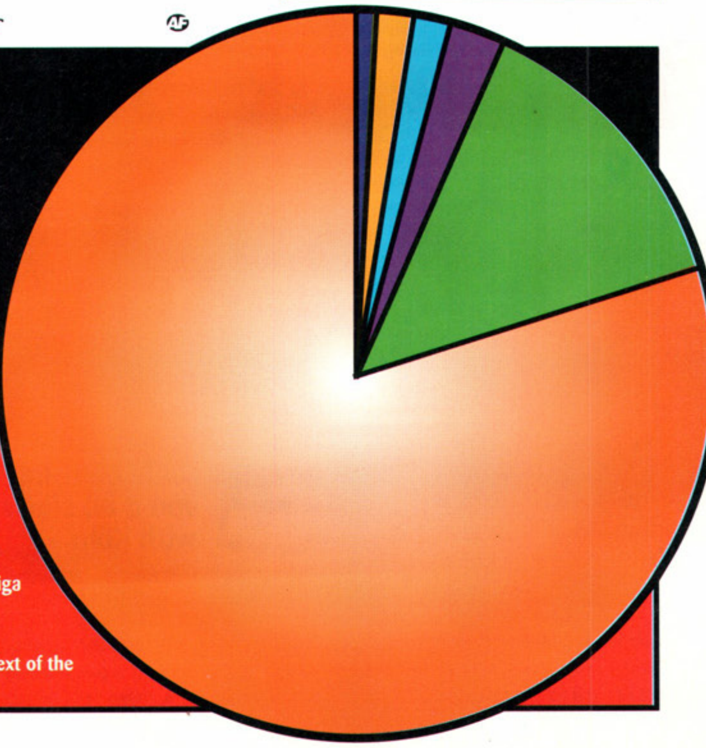
**Based on the fact that people complain about a lack of regulation on the list, we've decided to introduce some hard and fast rules. Expect these to change as time goes by, although some will stay fixed:**

- **All polls must have dates. For an example of this, look at existing polls before starting one of your own. Also, unless absolutely necessary, choose a closed or anonymous poll – the named one takes up far too much space.**
- **Make sure you quote sensibly, don't include the greeting or signature from the previous mail, etc.**
- **Pay attention to and keep all mails with MANAGE at the start of the subject line.**
- **Keep the subject live. Make sure that it applies to the mail you are sending, or change it to something more appropriate.**
- **There are no content restrictions on afb, although swearing is frowned upon, but please don't include attachments unless previously agreed.**
- **Any URLs posted should have the "http://" part to enable people to simply double-click on them to launch their browsers.**

## VOX POP

afb members were asked:

***"What score does a product need for you to buy it?"***



**CATEGORIES FROM TOP CLOCKWISE:**

- I don't buy based on what AF says
- 70%
- 90%
- I'm not buying anything for my Amiga anymore
- 80%
- I make my buying decision on the text of the review , not just the score

# Back issues

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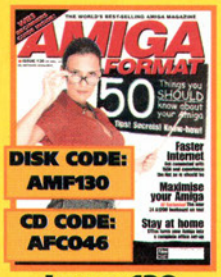
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**If you have a feature idea, a review, a reader request or you want to be in the Amiga Angels list, send an email to ben.vost@futurenet.co.uk, with "Features", "Reader Review", "Reader Request" or "Amiga Angels" in the subject line accordingly. If you don't have email, a letter to the *AF* address with headings is also fine.**

**If you want to speak to us about a technical problem, we have a reader call day on Tuesdays. Call us on (01225) 442244 (10am–1pm,2pm–5pm).**

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# power computing ltd

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delivery 2-3 days £5 next day £8 saturday £15 northern ireland £15 monitor/tower £8 (u.k. mainland only)

**we now offer a full e-commerce web site, check it out for more products and descriptions -**

available now £34.95




We are able to offer a special discount for 3.1 ROM chips when purchased with OS3.5 - A500/600/2000 **£14.95**, A1200/3000/4000 **£19.95**

**WARNING - You must have OS 3.1 ROMs.**

## amiga 3.1 operating system

*6 Disk set & 4 manuals - Workbench, DOS, AREXX & HD

| | |
|---|---|
| Amiga 3.1 OS for A1200/3000/4000 ROM chips, disks and manuals* | £39.95 |
| Amiga 3.1 OS for A500/600/2000 ROM chips, disks and manuals* | £35.95 |
| Amiga 3.1 OS disk set and manuals* (no ROMs) | £19.95 |
| Amiga 3.1 OS A1200/3000/4000 chips only | £25.95 |
| Amiga 3.1 OS A500/600/2000 chips only | £19.95 |
| Amiga 3.1 OS disk set only | £9.95 |

## new amiga software

| | |
|---|---|
| Breathless | £9.95 |
| Red Mars CD-ROM | £19.95 |
| Big Red Adventure CD | £9.95 |
| Directory Opus Magellan II | £49.95 |
| PowerMovie CD-ROM | £34.95 |
| Scala MM400 Multimedia presentation s/w | £49.95 |
| CAM-Control - Digital camera s/w | £25.95 |
| ScanQuix 4 - Award winning scanning s/w | £49.95 |




## turbo print 7

| | |
|---|---|
| Turbo Print 7 | £38.95 |
| Upgrade from 5 & 6 to TurboPrint 7 | £18.95 |

## digital cameras

We stock a full range Digital Cameras. Please call or see our web site for more information.

## scan doubler and flicker fixer

Plugs onto the LISA chip and the ALICE chip with a 15-pin connection to a monitor. This leaves the 23-pin monitor port free for use with a genlock device

| | |
|---|---|
| ScanMagic Internal with Flicker Fixer | £69.95 |
| ScanMagic Internal | £49.95 |
| ScanMagic External | £49.95 |
| ScanMagic External with Flicker Fixer | £69.95 |

## new power modem bundles

| | |
|---|---|
| Economy bundle 1 56.6 Kbps Fax/voice including iBrowse web browser, Net & Web 2 | £79.95 |
| Economy bundle 2 as above plus Silver Surfer fast serial interface | £99.95 |
| NEW 56.6 Kbps Fax/Voice modem only | £59.95 |

all prices include VAT. E&OE

## SPECIAL - ONLY £59.95




UltraSlim ATAPI CD-ROM drive, complete with 4 way buffered interface and IDE '97, PSU, Audio Mix and cables.

## cd-rom, cd-recordable & rewritable

**EIDE cd-rom drives**

| | |
|---|---|
| 6x Internal ATAPI CD-ROM (bare unit) | £29.95 |
| 6x External ATAPI CD-ROM | £65.95 |
| 36x Internal ATAPI CD-ROM (bare unit) | £45.95 |
| 36x External ATAPI CD-ROM | £79.95 |
| 40x Internal ATAPI CD-ROM (bare unit) | £54.95 |
| 40x External ATAPI CD-ROM | £89.95 |

(External drives include Buffered Interface, IDEFix '97 software, cables and 2 CD titles. For EIDE'99 add £10)

**SCSI cd-rom drives**

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|---|---|
| 32x Internal SCSI CD-ROM (bare) | £89.95 |
| 32x External SCSI CD-ROM | £119.95 |

(External includes cables, with software and 2 CD titles. Requires SCSI interface )

**cd-rewritable drives** (inc. 5 blank CDR, 1 CDRW)

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|---|---|
| x6 x4 x24 CDRW ATAPI CD-Rewritable Int. | £199.95 |
| x6 x4 x24 CDRW ATAPI CD-Rewritable Ext. | £279.95 |
| x6 x4 x24 CDRW & 6.4GB HD Twin Box | £479.95 |
| Box of 10 CDR discs | £14.95 |
| Box of 5 CDRW discs | £29.95 |

## amazing hard drive deals

**Plug and play hard drive. Includes cable and is already partitioned. All HD's come with a 2yr warranty**



2.5" 6.4GB £189.95 Hard Drive

## 2.5" hard drives

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| 2.5" **3.2GB** IDE including IDE cable | £149.95 |
| 2.5" **4.8GB** IDE including IDE cable | £169.95 |
| 2.5" **6.4GB** IDE including IDE cable | £189.95 |
| 2.5" **10GB** IDE including IDE cable | £279.95 |

## 3.5" hard drives

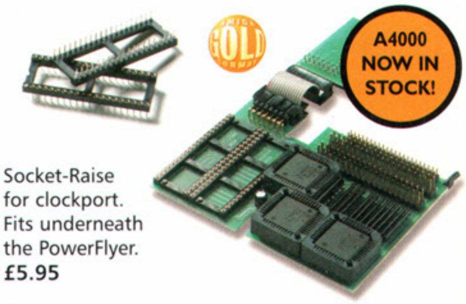
| | |
|---|---|
| 3.5" **6.4GB** IDE including IDE cable and install disk | £109.95 |
| 3.5" **8.4GB** IDE including IDE cable and install disk | £129.95 |
| 3.5" **10GB** IDE including IDE cable and install disk | £149.95 |
| 3.5" **13.6GB** IDE including IDE cable and install disk | £169.95 |



## iomega zip

| | |
|---|---|
| Zip 100MB external SCSI | £139.95 |
| Zip 100MB internal ATAPI | £99.95 |
| Zip 100MB internal ATAPI (bare unit only) | £75.95 |
| Zip cartridge (100MB) | £12.95 |
| NEW Zip 250MB External SCSI inc. cartridge | £189.95 |
| NEW Zip 250MB ATAPI Internal | £159.95 |
| NEW Zip cartridge (250MB) | £19.95 |

A4000 NOW IN STOCK!



Socket-Raise for clockport. Fits underneath the PowerFlyer. **£5.95**

## a1200 powerflyer gold edition

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|---|---|
| Power-Flyer, 4-way enhanced IDE/ATAPI controller, Supports the latest PIO-3 and PIO-4 faster modes, Autoboot from Zip and LS-120, UDMA - 11MB/sec, inc. Allegro CDFS software | £54.95 |

## new a4000 powerflyer gold edition

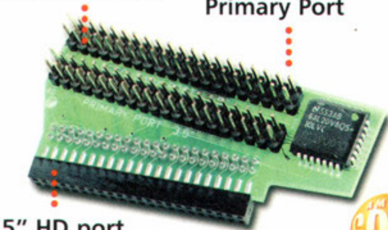
- Enhanced IDE/ATAPI controller for ZORRO III bus Amigas
- Includes Allegro CDFS - the fastest Amiga CD file system, supports video DVD format

| | |
|---|---|
| A4000 PowerFlyer Gold Edition | £79.95 |

## new allegro cdfs software

- For non-gold PowerFlyer users

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| Allegro CDFS upgrade | £10 |




## 4way buffered interface/EIDE'99 s/w

- Supports all IDE and ATAPI removable devices
- Autoboot from Zip and LS-120 drives
- 4 IDE/EIDE/ATAPI devices support
- Includes Allegro CDFS - the fastest Amiga CD file system, supports video DVD format

| | |
|---|---|
| 4way buffered Int. & EIDE'99 Gold Edition | £29.95 |

## new mk3 4way buffered /IDEFix 97

- Includes cable to connect to the motherboard
- Supports all IDE and ATAPI removable devices
- Autoboot from ZIP and LS-120

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|---|---|
| MK3 4way buffered Int. & IDEFix 97 software | £19.95 |

## buddha flash

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|---|---|
| Supports 4 IDE/ATAPI devices | £49.95 |

## kylwalda - bootadaptor

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| To use PC floppy drive as replacement of DF0 | £19.95 |
| PC Floppy Disk Drive | £20.00 |

## catweasel Mk 2

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|---|---|
| A4000/A1200 advanced floppy drive controller, can use most PC floppy drives | £49.95 |